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ABSTRACT

A project is an extended, in-depth investigation of a topic, ideally one worthy of children's attention and energy. This catalog, prepared for an annual meeting of the National Association for the Education of Young Children, combines articles explaining the project approach in the classroom with summaries of projects displayed at the meeting. It also contains several ERIC/EECE digests relevant to the project approach. The introductory articles cover such topics as the importance of projects, the project approach in action, documenting projects, frequently asked questions about project work, incorporating the project approach into a traditional curriculum, and results of a brainstorming session among teachers beginning project work. Projects presented at the annual meeting include those on water, rocks, houses, building construction, newspaper, and bicycles. The ERIC digests included in the catalog discuss integrating computers in the early childhood classroom, the benefits of mixed-age grouping, encouraging creativity, the contribution of documentation to the quality of early childhood education, problem solving, Reggio Emilia, and resource rooms for children. Information on a projects web site, project approach institutes, other ERIC texts on the project approach, and how to use the ERIC system is also included. (EV)

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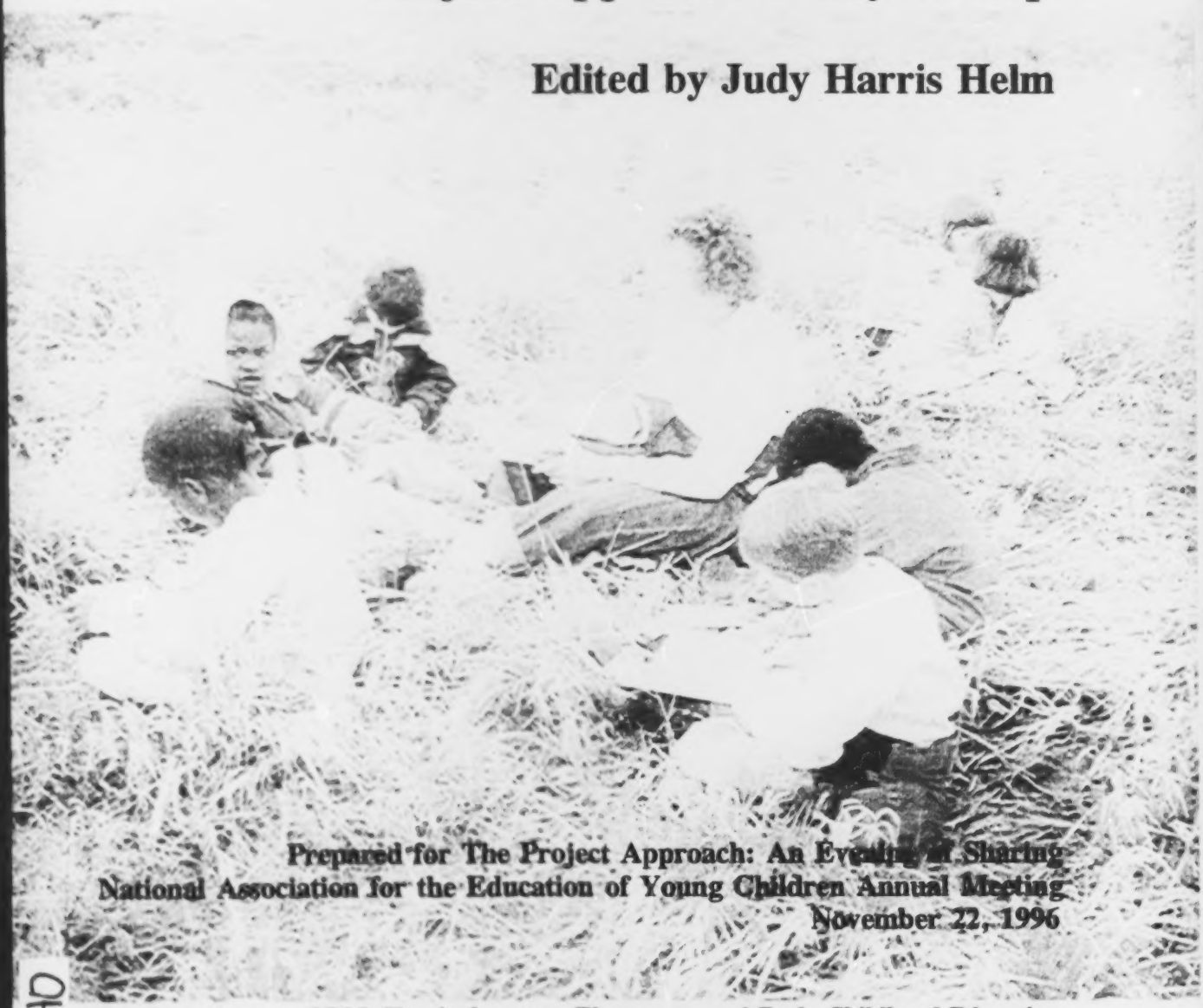
The Project Approach Catalog

by the Project Approach Study Group

Edited by Judy Harris Helm



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National Association for the Education of Young Children Annual Meeting
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University of Illinois at Urbana-Champaign

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Prepared for The Project Approach: An Evening of Sharing
National Association for the Education of Young Children Annual Meeting
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Foreword: The Importance of Projects

Lilian G. Katz
University of Illinois at Urbana-Champaign

In the displays presented in this exhibit, twenty-six teachers from nine schools in three countries present the results of their experience with incorporating the Project Approach into their curricula. The projects you are about to read about reflect the work of children and teachers in many different types of schools—urban and rural, large and small, public and private. These schools serve families from a wide range of socioeconomic levels. The teachers whose work is displayed here are among the many teachers around the world who are involving their young pupils in projects.

Most of the teachers whose work is shown here are fairly new to the Project Approach. However, the inclusion of projects in the curriculum of early childhood and elementary education is not new. Project work was a central part of the Progressive Education movement earlier this century in the United States. Kirkpatrick (1918) and his colleagues referred to it as the Project Method. In 1925, Rawcliffe, an elementary school supervisor in Cicero, Illinois, published "Practical Problem Projects" describing projects conducted in Chicago area schools during the 1920s in first- through ninth-grade classes.

The project method was further developed in the 1960s and 1970s in the infant schools in England. Today, projects constitute a significant element in the extraordinary work seen in the preprimary schools of Reggio Emilia. From Reggio Emilia much is being learned about the role of the graphic languages and of documentation in enhancing children's learning through projects, and about the roles of teachers and parents in good project work.

What is a Project?

A project is an extended, in-depth investigation of a topic, ideally one worthy of the children's attention and energy. In other words, projects involve children in conducting research on phenomena and events worth learning about in their own environments.

In the process of these investigations children have opportunities to pose questions, to generate theories and predictions concerning possible answers, to seek answers to their questions

(answers from which they are likely to generate still more questions), to interview experts and others from whom relevant information can be obtained, and to engage in other activities involved in collecting information.

Projects provide contexts in which children can apply a wide variety of social and intellectual skills, in addition to the basic academic skills being learned in the more formal parts of the curriculum. Thus, in this exhibit the efforts of very young children to write and to represent in other ways the data gathered during their investigations can be seen. In addition, projects provide contexts for young children to argue, cooperate, collaborate, share the responsibility of data gathering, check findings and many other research strategies. Projects also provoke children to engage in extensive probing into the nature of events and objects around them, to learn how things work and how they are made, to find out who does what and what tools are used, to discover the sequences in which actions are taken in the events investigated, and to observe and describe the work done by people in their own everyday worlds. Projects can also involve children in close examination of the natural world around them, help them learn what natural world objects consist of, and teach them to observe closely how things grow and change over time.

Projects can be incorporated into the curriculum in any part of the world. Every environment and the people in it are potential sources of new and valuable information for young children. The knowledge gained and the skills applied in investigating their own experiences support children's in-born dispositions to learn and investigate what is at hand. Furthermore, knowledge and skills of all kinds are strengthened, not only with instruction, but also through application and use of the kind of skills seen in these examples of project work.

It is useful to keep in mind that young children may come to their school experiences with different kinds and amounts of exposure to books and stories and encouragement to try to read, to counting objects and using pencils, and so forth. However, all children come to school with lively minds marked by a powerful disposition to make the best sense they can of their experiences. Projects provide rich contexts for expressing and strengthening that fundamental disposition. We hope these examples of the work of children and their teachers provoke your interest in learning more about the Project Approach.

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Kirkpatrick, W. H. (1918). The Project Method. *Teachers College Record*. Also reprinted in Schultz, F. (Ed.) *Sources: Notable Selections in Education*. Guilford, CT: The Dushkin Publishing Group., Inc. pp. 26 - 33.

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The Project Approach in Action

Sylvia C. Chard
University of Alberta, Canada

Projects, like good stories, have a beginning, a middle, and an end. This temporal structure helps the teacher to organize the progression of activities according to the development of the children's interests and personal involvement with the topic of study.

During the preliminary planning stage, the teacher selects the topic of study (based on the children's interests, the curriculum, the availability of local resources, etc.). The teacher also brainstorms her own experience, knowledge, and ideas and represents them in a topic web. This web will be added to throughout the project and used for recording the progress of the project.

Phase 1: Beginning the Project

The teacher discusses the topic with the children to find out the experiences they have had and what they already know about it. The children represent their experiences and show their understanding of the concepts involved in explaining them. The teacher helps the children develop questions their investigation will answer. A letter about the study is sent home to parents. The teacher encourages the parents to talk with their children about the topic and to share any relevant special expertise.

Phase 2: Developing the Project

Opportunities for the children to do field work and speak to experts are arranged. The teacher provides resources to help the children with their investigations; real objects, books, and other research materials are gathered. The teacher suggests ways for children to carry out a variety of investigations. Each child is involved in representing what he or she is learning, and each child can work at his or her own level in terms of basic skills, constructions, drawing, music, and dramatic play. The teacher enables the children to be aware of all the different work being done through class or group discussion and display. The topic web designed earlier provides a shorthand means of documenting the progress of the project.

Phase 3: Concluding the Project

The teacher arranges a culminating event through which the children share with others what they have learned. The children can be helped to tell the story of their project to others by featuring its highlights for other classes, the principal, and the parents. The teacher helps the children to select material to share and, in so doing, involves them purposefully in reviewing and evaluating the whole project. The teacher also offers the children imaginative ways of personalizing their new knowledge through art, stories, and drama. Finally, the teacher uses children's ideas and interests to make a meaningful transition between the project being concluded and the topic of study in the next project.

This summary outline has explained some of the common features of projects, but each project is also unique. The teacher, the children, the topic, and the location of the school all contribute to the distinctiveness of each project.

Documenting Projects

Judy Harris Helm, Sallee Beneke, and Kathy Steinheimer
Valeska Hinton Early Childhood Education Center, Peoria, Illinois

How do you know what children are learning in projects? How can you tell how best to facilitate students' learning through the project process? How can you help others to see the value of project work in your curriculum? These are all questions that a teacher beginning project work may ask. Because each project is unique and each group of students approaches the project topic in its own way, there can be no prepackaged plan for a teacher to follow, no teacher's guide. The teacher must assess accurately the knowledge and skills students have and need, and the effectiveness of the learning experience. The teacher gathers resources, asks questions, provides access to experts, and arranges site visits based on the results of analyzing and interpreting the evidence gathered of students' learning rather than on a detailed pre-set plan.

The processes of carefully collecting, analyzing, interpreting, and displaying evidence of learning is called documentation. Documentation enables the teacher to effectively manage the project process and optimize learning opportunities. When shared with others, documentation also provides evidence that students are mastering curriculum goals.

The displays in this exhibit present evidence of children's learning. There are photos, videotapes, samples of children's work, anecdotal notes, student products, and child and teacher reflections. The displays and the project notes in this text provide insight into how the work in these projects flowed and progressed in these classrooms. Care should be taken not to use them as "how to manuals" but rather, just as the teachers did, to use them as evidence of a unique, dynamic process which took place over time in each of these unique classrooms.

How to Get Started

Teachers can prepare for the documentation process by gathering together materials that are helpful for documenting. These include post-it notes for writing down observations and folders for collecting children's work and anecdotal notes. Some teachers find it helpful to place pens and notepads around the classroom so that students can jot down observations and thoughts quickly. It may be helpful to have a checklist for your classroom with children's names and any

particular knowledge or skills that you are wanting to observe or document during the project process. A camera, film, and tape recorder can be very helpful. At certain times during a project, a video camera is also helpful.

Care should be taken to capture evidence of children's knowledge and skills at the beginning of the project. Making a web provides a written record. Some teachers encourage students to add to or alter the web as the project progresses as a way of visually representing their learning. Recording or writing down exact words in statements and questions also enables assessment of change in vocabulary and understanding.

Documentation during the Project

The teacher might also want to consider keeping a journal. Many teachers take time each day to outline what was done on the project that day and to write about anything significant which took place. These entries can focus on the class, an individual child, a group of children, the project work itself, or the teacher and the teaching strategies.

It is helpful to look at a required curriculum outline or developmental checklist and to think about how evidence of learning in these areas during the project can be collected. For example, a student may find a need to collect data. This event may provide an opportunity to document a child's ability to count.

A time can be set aside daily to summarize and reflect on the observation data and items collected. Documentation can guide the teacher in planning what resources to access, experts to bring in, or field experiences to initiate. Any skills identified as needing to be taught can be introduced during non-project times of the school day.

Children should be encouraged to express what they are learning in many ways. These expressions, in a variety of media, become documents of children's ideas and understandings. Some means of expression displayed in this exhibit include narratives such as conversations, written stories, and books; writing such as captions and signs; constructions such as block structures, play environments, dioramas, and models; artistic expressions such as drama, drawing, painting, sculpture, musical expressions, and photography; and webs and lists.

Teachers can display selected items in the hallway and room that communicate what children are learning. Written descriptions will enhance the displays when they include the significance of what is displayed such as what the children have learned, why the item was chosen for display, the processes used by the class, or what an individual child learned. The description provides the viewer with an understanding of the educational value of the children's experiences. Adding to displays as children's work advances and projects progress increases the value of displays and maintains the interest of observers. Students can be involved in documenting their own project work. Even the youngest children can assist in making a book that tells the story of their project. Older students can evaluate and select what they judge to be their best work for display and can write their own descriptions and captions.

At the End of the Project

Sharing of documentation can educate others about the learning which occurred over the course of the project. The teacher can plan when and how to share documentation with parents such as parent-teacher conferences. Displays can be moved to more central areas of the school to be more visible. Project books and videos can be sent home with children to share with parents. Children can reflect on the learning experience as they review the documentation. Their words can be recorded and added to the narratives accompanying the display.

Results of Documentation

Time spent documenting children's learning can be a good investment. Careful documentation of a project can provide evidence of the wide ranging and in-depth learning that takes place when using the Project Approach. This type of learning, along with students' dispositions, are often not assessed or measured through standardized group-administered achievement tests. Documentation during a project can enable the teacher to strengths of students not always measured in traditional assessment. Perhaps the most important benefit, however, is that documentation informs and directs the teaching process. Doing a project without documentation denies the teacher the gift of seeing into the minds of the children, matching strategies and materials with needs, and challenging children's thinking. Documenting enables the teacher to maximize the project approach experience and to become a partner in learning with the child.

(The ideas in this chapter are based on *Documenting Young Children's Learning*, Judy Harris Helm, Sallee Beneke, and Kathy Steinheimer, Teacher's College Press, in press)

Frequently Asked Questions about Project Work

Eileen Borgia
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During the past few years, we have had many opportunities to help teachers learn to carry out the principles of project work in their classrooms. There have been numerous occasions for us to conduct workshops, courses, seminars and institutes, and to discuss informally the fine details and challenges that are of concern to teachers. More recently, the PROJECTS-L Listserv has become a forum for addressing in-depth some of the issues. The following are a few of the most frequently asked questions that we have identified. There are no definitive right answers, but we hope that the following discussion will be helpful.

> *In my school, teaching is traditionally systematic, individual instruction or direct instruction to large groups. Learning is teacher controlled and directed. Must I give that up to do project work?*

It isn't that you have to give up customary methods and activities; rather, you add new and interesting ones that help children use what you have taught them in more formal instruction. Project work provides an opportunity for interactive learning, intrinsic motivation, integrated curriculum, investigation, discovery, and application of skills. Children often choose from activities suggested by the teacher. Project work offers children the opportunity to experiment and work independently or in small groups. Curriculum concepts are not only "covered" by the teacher's instruction; they are also learned and applied because they become necessary tools with which to accomplish an investigation and report its findings. It isn't that you give up things; you simply take a different approach to what is already there in the curriculum, and thereby enhance children's total learning.

> *Is project work more suitable for special populations of children (i.e. average, gifted, middle class, at-risk)?*

The projects in this book show the range of possibilities and diverse settings in which project work is done. A teacher can apply the principles with any individual or group of children. Teachers in several countries have successfully used projects with children ranging from toddlers

to college students; in groups of children considered to be average, at-risk, learning disabled as well as gifted; in both homogeneous and heterogeneous age groups; and from all socioeconomic levels. Project work allows children to work at their own level and encourages divergent thinking so that each child's special talents can emerge and complement those of others in the class. Children can learn from each other and develop an appreciation and acceptance of individual differences. In other words, all children, not just a selected population, can experience and benefit from the richness of good project work.

How can a teacher allow multiple activities and experiences to go on simultaneously, without losing control of the class?

Although it might take some initial adjustment, teachers who adopt the project approach gradually learn to manage several things going on at the same time in their classroom. Teachers often describe their role in project work as facilitator, guide, or consultant to the project "workers." A positive, encouraging attitude with clear expectations and procedures for leaving the classroom, conducting field experiences, and using class time are as important for teachers who do project work as they are for teachers using more formal teaching methods. They gradually involve the children in sharing some control over events, and encourage them to make their own decisions on a variety of issues, such as the work routines, the distribution of responsibilities for work to be done, and expectations for the project. Even teachers who have no assistants still do projects. It helps to teach the children strategies for negotiating, cooperating, working as teams, and assisting one another. Teachers frequently report how unprepared they were for the extent to which children assumed responsibility for their own work and "ran with" the project without them.

How much time should be devoted to project work?

Time varies with the people, the topic, and the setting. Longer periods of time provide rich opportunities to observe and interact with children, record anecdotes, monitor progress, and assess what practice on skills or new knowledge to include during formal instruction. The amount of time per day allocated to project work may also vary throughout its course, perhaps larger chunks of time during Phase 3 when preparing and presenting culminating activities. Analyzing your current day may reveal snippets of time, which when rearranged, could become larger chunks of time for project work. The more creatively a teacher integrates the requirements of the curriculum into project work, the more time will be available for it. When times for routines are dovetailed, for example, snack and rest room breaks are taken informally, and children gain a few extra minutes to continue work on their project.

Special reading, speech, art, or special education resource teachers can be invited to work within your classroom, giving the students extra help in the context of their project.

Forty-five minutes to an hour of uninterrupted time is usually a minimum for providing children with satisfying opportunities to work in depth on a topic. Some teachers take a look at the total amount of time available in the week and block out some times that will be devoted to

project work. The interest of the children in the topic and the teacher's creativity in integrating the requirements will help determine how much time can be allocated to the project.

As Lilian Katz recently posted to the Projects-L Listserv, "Teachers are best off experimenting with using time. Remember that the approach is experimental, meaning that it might not work. If it always worked, it wouldn't be an experiment!"

Can I do projects and still honor the official curriculum?

The key to this question is how the teacher interprets the curriculum requirements. The curriculum adopted for a school typically prescribes a series of selected skills and knowledge, a scope and sequence for each grade or age level. It is not an either/or proposition: project work or the district curriculum. Think of project work as a rich part of your existing curriculum. It is not "an addition to" or an "add-on." Teachers can use project work as a useful and creative way to address requirements and provide meaningful study of what otherwise could be boring and tedious. It is a matter of approaching project work as a way of making required curriculum come alive!

Skills in the language arts are applied and practiced in children's representation of knowledge. Mathematical skills such as categorizing, finding patterns and relationships, estimating size, shape, depth, quantity, measuring, weighing, adding, subtracting, and so on, become practical tools for investigation during project work. Some curricula prescribe a specific topic to be addressed during a particular grade in school. For example, a reading textbook series often includes stories around a theme, such as animals, nature, or the community. Each theme has the potential to provide a topic for an in-depth study. When required, the adopted textbook can serve as a secondary source of information for the project.

How do I get started?

Doing the first project is probably the scariest. Choose a manageable topic ... one that you are comfortable with, and which meets Katz and Chard's recommended criteria. Begin by brainstorming and making your own web. Have a discussion with the children about the topic, and ask open-ended questions to start them thinking. Encourage them to ask you and the other children questions. They might make a drawing related to the topic. Send a note to the parents asking them to help their children write a memory, or bring a photo to school. Begin your own search for community resources, remembering to look within the school, to the families and the larger community for resources. Gather the materials and supplies such as magnifying glasses, weighing and measuring equipment, string, tape, glue, paper, pencils, paint, clay, or clip-boards. Then explore with the children. It may be slow starting, but be persistent. It is helpful if you have a colleague or friend who will help throughout the project by listening, assisting in initial planning, and helping in the classroom if possible. The Water Project in this book is an example of three teachers who supported each other.

In a recent electronic mail message, Dot Schuler wrote:

> All of these questions were foremost on my mind when I 'took the plunge'! But, the plunge was the hardest part! The rest was just one amazing discovery after the other! It was just the beginning of opening up a world of teaching children, and a world of watching children learn, that I never knew! The questions, after the plunge, are so easy to answer! But, you must plunge to understand.

Reference

Katz, Lilian G., and Chard, Sylvia C. (1989). *Engaging Children's Minds. The Project Approach*. Norwood, NJ: Ablex.

Incorporating the Project Approach into a Traditional Curriculum

Judy Harris Helm
Peoria, Illinois

It is difficult to introduce the project approach in a school where the other teachers are using a more direct instructional approach. I believe, however, that all teachers have similar goals for children, even though their understanding of how to achieve these goals may be different.

The suggestions below were generated in a discussion with a first grade teacher in response to the frustrations she expressed about her attempts to implement the project approach in an environment with a tradition of an imposed, discrete, skills-oriented curriculum.

- You will be in the position of showing your colleagues how children learn in the project approach. The other teachers are likely to be watching to see what you do and how much your children are learning. Accept that role. You will be doing two jobs the first year. This means much extra work, but it will be worth it.

- Examine the curriculum requirements that are given to you. What exactly does the school (and the district) want children to learn and to know? Make a list of the answers to this question. The goals and specific objectives may be found in the curriculum guide, report cards, standardized tests, or a developmental checklist.

- Assure your principal and others that you will be addressing this list of goals and objectives, although you may do so in a different way from your colleagues. If necessary, request permission to vary the time schedule for the introduction of the topics and skills. Be sure to make clear that you are requesting flexibility of the time schedule, and not of the content and skills to be covered.

- Choose, as a first project, a topic which is clearly consistent with the educational objectives of your school and district. For example, if living and non-living things are part of your science curriculum, select possible project topics out of this general concept. In other words, stay with project topics that coincide with the curriculum, especially during the first year.

- Make a web with children regarding their experiences and knowledge of the topic. Revisit and revise the web with the children throughout the project. Each time you revisit and add to the web, make a copy of it and keep it, always keeping a copy prior to the revisions. The series of webs will show the growth in the knowledge and understanding of your students. Display these webs prominently inside and outside your room.

- To begin, focus on the project approach in one part of your day. Some teachers set aside a special project time each day when all children focus on some part of the project. Several groups of children may be doing in depth exploration in different aspects of the project; one or two children may be working solo. Other teachers already have a time block called "work time" or "center time" in which children choose the locations in the room to work where materials and equipment have been set up for specific activities. Some of these centers can focus on project work. Other centers may focus on other aspects of the curriculum to be covered. It is best to have an extended time period for project work. Setting aside a block of time like 45 - 60 minutes during which children work at centers, some required and some project focused, can give you that time and still enable work to move ahead on required curriculum materials. *Joy of Learning*, by Bobbi Fisher, explains how to manage this type of center time.

  Project work which coincides with content guidelines can also be scheduled for specific times with the whole class. For example, measuring how far different balls roll in a project on balls can be the math activity when charting and graphing is involved. Writing what is observed on a field trip can be the journal writing activity of the day.

- Encourage children to do as much writing and drawing as possible about what they are observing and learning in the project. Have them revisit, redraw, and rewrite. This helps children solidify knowledge, become aware of their own learning, and demonstrate to others how extensive the learning actually is during projects. Display these items, showing first attempts (or sketches) and final copies prominently. This documentation can be very powerful.

- If you have required workbooks or textbooks, are the pages designated? You may be able to choose pages. You can do the minimum needed for children to be successful. Specific pages can be set up as part of a required center activity, or as Bobbi Fisher calls them "I Cares." Work pages, if required, can be done several at a time, or individually, and sent home together or as each one is completed.

- At the end of each project, go back to your list of required content. Make a copy of it and highlight all those content objectives covered in the project work. Display this list prominently with other project documentation.

These ideas can get you through the first year. When others see the documentation of learning, they will understand the power of projects. Be patient, don't push, be consistent, and document. Good luck!

Notes from a Brainstorming Session of Teachers Beginning Project Work

Gail Gordon, Kathy Steinheimer, Cindy Rocke, and Judy Harris Helm
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A group of pre-kindergarten through first grade teachers met to discuss what they had learned from their first attempts at project work. They brainstormed the following list of ideas:

- We learned that we can have more than one project going on at a time, and that we can have projects in which just a few children are involved.

- We can select and assign children to do a project and get them involved in more challenging activities, even if the rest of the class is not ready for experiences at the same level.

- We can have children do more sharing and appreciating of each others' work. During the sharing of information about each others' project, children can begin to understand the idea of growing and learning, how they can get better at doing something, and how they can get new ideas of things to do.

- We can make more class books about the projects which show the processes we followed and the things that we have learned. These class books can be checked out and taken home so parents can see what their children are learning and can become more involved in what their children are doing in the classroom.

- We can provide more varied media, including clay, wire, and more scrap materials. These materials can be available in the classroom on a regular basis so that children become familiar with them before attempting to use them to represent their learning. We can have more recyclable materials available for children's use.

- We can do more constructions as part of our projects, so that the whole school can watch our progress. We can make our constructions in a prominent place (such as in the central court or hallway).

- We can help children select drawings or parts of their drawings and show them on the overhead projector, so others can see their representations.

- We can do more pencil work with children and provide clipboards so children can draw and write comfortably in a variety of places.

- We can spend more time looking at things and talking about what children are observing about how things are made, shaped, etc.

- We can do more mural or other large-scale cooperative representations instead of individual work all the time.

- We can teach, during other scheduled activities, some of the skills helpful in project work, including generating lists of things needed or lists of things to do, assigning jobs to different children and/or asking for volunteers, modeling questioning and wondering, and providing practice in construction skills like taping, stapling, building.

- We can assign more jobs to children for preparation of materials and activities in the classroom, so they become accustomed to independent action.

- We can provide more pictures and photos of real objects and place real objects and artifacts in art and block areas, and other areas where children try to represent objects.

- We can teach younger children how to request help from older children when carrying out tasks which require some skills the younger children don't yet have, like cutting large things or tracing their work onto transparencies.

- We can provide more reference books with pictures for children to study.

- We can display more work in progress in the classroom for other children to see; then, we can take it down and continue working on it.

- We can do more drawing of our building and our environment to heighten children's awareness and interest in their surroundings.

- We can share more of our project approach experiences with other teachers, so that we support each other and experience more of the excitement of learning.

The Water Project

A Project by Prekindergarten through First Grade Students at Valeska Hinton Early Childhood Education Center, Peoria, Illinois

Length of project: *3 months* ***Teachers:*** *Pam Scranton, Stacy Berg, Mary Ann Gottlieb*

Phase One

Beginning the Project

The water project emerged from an investigation of ice and snow. Each classroom (of three that worked together) webbed according to the interests of the children. Preprimary 1 focused on aquariums and water life. Children represented their interest through drawings and block construction, eventually creating a model of an aquarium. Initial experiences included dissection of fish, dismantling the classroom aquarium, and listing information known and needed. Preprimary 2 studied water purification after seeing aerial photographs of the Peoria water treatment plan. Initial experience included creating a block replica of the plant which they used for dramatic play. Primary 1 investigated water around the house. Initial experiences included study of homes and exploration of a dollhouse.

Phase Two

Developing the Project

A water department serviceman explained how meters work, showed shut off valves outside the school, and left meters for investigation. A water treatment engineer explained the water cycle and purification process. A plumber brought tools and talked about his career. After dismantling their model aquarium, Preprimary 1 constructed a walk-in aquarium. Problem solving included reaching a consensus about design, finding appropriate-sized nails and wood, making the proper paint mixture to adhere to plastic, and assigning tasks. During construction of the water plant, children in Preprmary 2 sketched plant designs and combined features before construction. Each day additional aspects of the plant emerged as children restudied aerial photographs and a video of a working plant. Dramatic play began and children added wooden figures and vehicles. As play diminished, the group began a large mural of the plant. Primary 1 children examined and sketched a real dollhouse before coming to the conclusion that they could make a house using cardboard boxes. Problem solving included several attempts to connect the boxes, construction of the roof, creating the furniture and appliances and creating the water and soil pipes. Interest in laundry facilities led the group to study and represent the school's washer and dryer before the children built their own laundromat.

Phase Three

Concluding the Project

The project concluded with a field trip to the creek and pond. Some children experimented with boats, some sketched the pond, and others collected pond life for later exploration. Almost all of the older children had opportunities to explore the pond. A multi-age group worked with a naturalist searching the creek for waterlife samples and a fording place, and collecting water samples. Follow-up activities included murals, reports to other groups, and the making of a video explaining the operation of the water treatment plant.

Comments

This project is an example of how one topic or theme can be selected by a group of classrooms or a school and still follow the children's interest in individual classrooms. Ten teachers and associates were able to work together and support each other in webbing, sharing resources, and planning over the three-month period. In addition, the teachers were able to facilitate a smaller, multi-age project group with children from all three rooms by sharing responsibility for facilitating and working with the larger groups. This group investigated theories of sinking and floating. They constructed and experimented with several types of boats. They also investigated pond and creek life and then assisted in the construction of an ornamental creek bed in the center court of the school. Documentation includes integration of portfolio collection and observations for a developmental checklist, which are part of the assessment and monitoring system of the center.

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The Meadow Project

A Project by Three-, Four-, and Five-Year-Old Children at Illinois Valley Community College, Oglesby, Illinois

Length of project: *6 weeks* ***Teacher:*** *Sallee Beneke, Rebecca Tonelli and Practicum Students*

Phase One

Beginning the Project

Crickets are plentiful in north central Illinois during the late summer. One day at snack time several children began to discuss the crickets they had seen and heard recently near their houses. The teacher asked, "I wonder where the crickets live?"' The children had many ideas which the teacher wrote on a web after snack. The next day the teacher took them with their clipboards to visit the meadow behind the school. There the children observed many crickets and began to make observational sketches of the meadow environment. Many additional insects were observed. Caterpillars, butterflies, and the purple thistles which attracted them were of particular interest to the children. This was the first of many visits to the meadow. On these trips the children learned to use magnifying glasses and clipboards. They collected many specimens for further sketching and classification in the classroom. The disposition to investigate began to develop. A caterpillar changed into a monarch butterfly during this period and sparked the development of a small group of children to investigate butterflies, their own particular area of interest in the project.

Phase Two

Developing the Project

Many resource books were made available for research and discussion. The children visited the meadow and made many additional sketches. Butterfly wings and cicada shells were available for examination and sorting. Many parents and instructors and adult students from the neighboring auto mechanics department brought in live insects, such as katydids and walking sticks for examination. Small detailed model insects were added to the sand table and the block area. Children began to use the correct terms for parts of the insect, such as "antennae, probiscus, jumping leg." A Meadow Habitat was constructed using dried samples from the meadow. Drawings which resembled insects began to develop. The children began to compare their preferences for insects through voting. They took a similar survey of other adults in their building: students, instructors, parents, and maintenance workers. Insects were measured, sorted, and compared through graphing. The butterfly group became involved in problem solving about how to build a construction to represent a chrysalis. Butterfly finger puppets revealed their knowledge of the patterns in butterfly wings. The students generated a list of questions about butterflies and interviewed a visiting expert.

Phase Three

Concluding the Project

Children reconstructed the Meadow Habitat, this time adding child-constructed thistles, insects, etc. A mural of the meadow for display in the main campus building was painted and clay figures detailing the parts of insects were modeled. The butterfly group developed a book about butterflies. This experience was a first exposure to project work for the teacher and six early childhood practicum students. Their reflections are included in the display.

Comments

This display is arranged to also show samples of the variety of ways that teachers can document children's learning. Photographs, audio and video tapes, narratives, teacher journals, records of staff dialogue, child self-reflections, statements of dispositions and group and individual products are all displayed. The display also shows how the information about the children's growth and development is gathered from the project for the portfolio and checklists of the center's assessment system, The Work Sampling System.

This was the first exposure to project work for six practicum students: Ellen Bejster, Mindy Kramer, Theresa Leifheit, Linda Peterlin, Arin Sorenson, and Robyn Tonelli. Their reflections are included in the display.

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The Farm Project

A Project by Three-, Four-, and Five-Year-Old Children
at Hillsboro Prekindergarten Program, Hillsboro, Illinois

Length of project: *4 weeks* ***Teacher:*** *Debbie Noyes*

Phase One

Beginning the Project

Living in a rural community, the children were somewhat familiar with farms. Even though some had never been on a farm, they had all seen a field of corn or cows in the pasture. A farm of miniature horses is adjacent to our school yard and for months the children watched the horses from the playground. Children's conversations revealed a strong interest in farms and the differences in knowledge about farms. Parents were asked to send in photographs, drawings, stories, and other items which indicated experiences that their children had on a farm. In small groups, these experiences were discussed and questions, comments, and misconceptions recorded.

Phase Two

Developing the Project

A parent offered to host a visit to the family's dairy farm. This visit was the beginning of the field work. We read many books about farms, both fiction and non-fiction. Before our visit to the dairy farm, the children generated a list of things they wondered about. The list was taken to the farm to be sure the questions were answered. The classroom environment was structured to provide opportunities for investigation of farm-related materials and opportunities for representation. Many of these materials were donated or loaned to the classroom by parents. We also visited the farm next to the school. The children became interested in the barn at the farm and later were able to do observational drawings of the barn from our school yard.

The children continued to represent their knowledge of farms through dramatic play, dictated stories, drawings, paintings, and conversations.

Phase Three

Concluding the Project

As a culminating activity, several children decided to make a "giant picture" or mural about farms. The group discussed what should be included in the mural. Next, they decided who would be responsible for each part. The group then carried out their plan using skills in problem solving and cooperating.

Comments

This project is an example of how important it is for children to have some previous experience with the topic and prior knowledge to bring to the project. This project was successful. The children were able to ask good questions because they already had some knowledge of farms. This project would probably not have been as successful in an urban setting, just as a project on elevators or apartment buildings would not be appropriate in a rural setting like this one.

The Houses Project

A Project by Five- and Six-Year-Old Children
at the Child Study Centre, University of Alberta, Edmonton, Canada

Length of project: *2 months* ***Teachers:*** *Margaret Brooks, Jim Odell, Shanthu Manoharan*

Phase One

Beginning the Project

This project began when children stopped to watch a house under construction near their school. They were also interested in the very old houses adjacent to their school and had noticed how one house had ramps and fire escapes. We invited children to represent and discuss what they knew about houses, especially their own house. They drew what they could remember of their house, and then used these drawings to build block houses and cardboard houses. We walked around the houses near the school and talked about all the details they could see: the shape and size of roofs, windows and doors; the number of floors; and the construction materials used to build them. Children drew these houses, first from memory, then from observation. Several children were having renovations done to their own houses. Many questions about houses and buildings were generated.

Phase Two

Developing the Project

A web was created. Several field visits were made to watch the house under construction progress from framing to dry-walling. Children made drawings and rubbings, took notes and measurements, and gathered samples of materials. Key workers at the site were interviewed and photographed, their tools examined and drawn, and descriptions of their jobs recorded. The children noticed the importance of blueprints. An architect brought a model of her own house which came apart to show the three levels and the scaled down blueprints on each level. An architects' office was setup in the block area and role play of designing and building occurred. Elevation and floor plans were still puzzling, so block structures were built on large pieces of paper on the floor and the outline of the blocks traced. Floor plans were made of the school. Elevation plans were done similarly. After understanding how plans are used, the class set about building a playhouse for the school yard. Work teams were formed for shifts so all could take part. Children learned how to frame doors and windows and how to shingle. Materials were examined in detail. Recipes for concrete were developed and tested and rebars introduced. Different kinds of nails and screws were sorted, resorted, and named. The children were interested in eves troughs (gutters) and assembled and tested them in many ways. Interest in down spouts and pipes led to exploration of the role of the plumber. A plumber brought samples of pipes and showed how to cut, join and repair pipes. An old sink was put in the water table and the block area became a plumbers repair shop with tools and pipes.

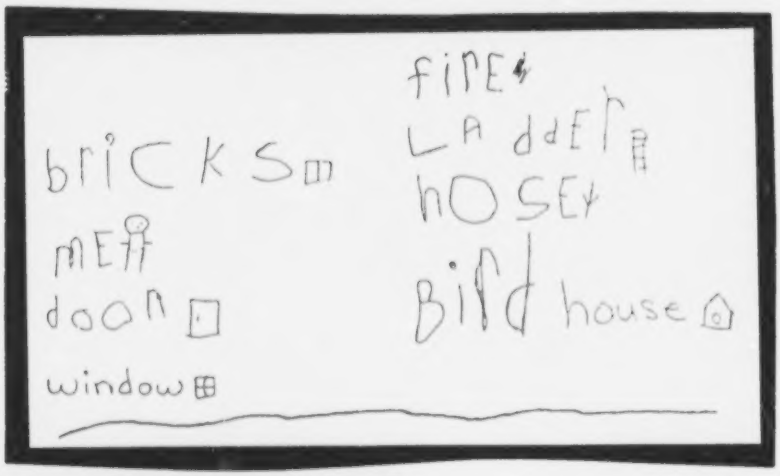
Phase Three

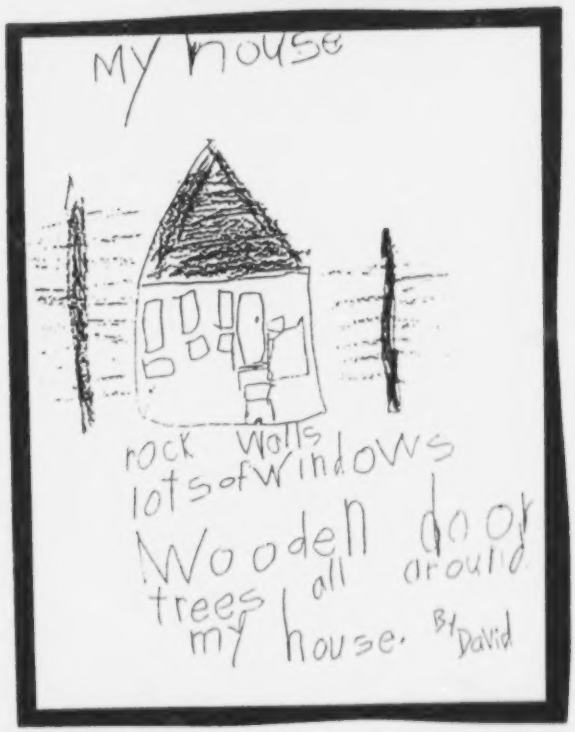
Concluding the Project

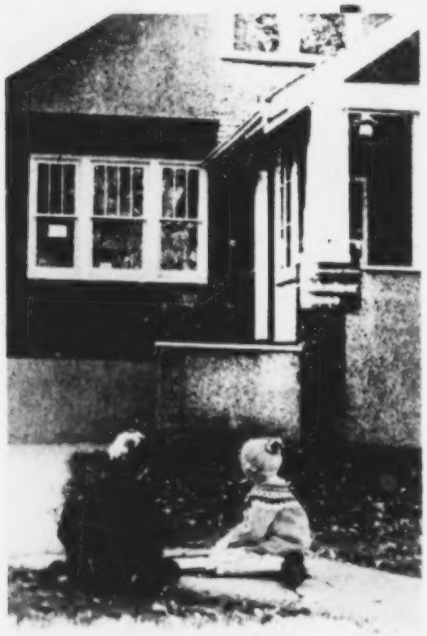
During the course of the project, children's work was documented through photographs and descriptions of the process. Examples of children's drawings, plans, writing, and calculations were displayed with descriptions. Parents, visitors and students were invited to view and read displays. Video clips were taken of some of the dramatic play events and some of the problem solving done in small groups. Several books were made at different stages of the project. These books told the story of the project with the ideas, language and words of the children. Some stories were dramatized. The books remained in the school so children and families could revisit them and remember what they had done.

Comments

During the recording of this project, the teachers were particularly interested in the role of adults in supporting children's learning. This role often differed from the role an adult takes in systematic instruction or free play. The teachers interpreted children's drawings and how these drawings informed teachers about children's problem solving, exploration and confirmation, data collection, and organization of ideas.







The Apple Project

A Project by Kindergarten Students
at Hong Kong International School in Hong Kong
Length of project: 2 weeks Teachers: Mary Jane Elliott, Carol Young, Bonnie Draheim

Phase One

Beginning the Project

At Hong Kong International School it is a "tradition" to start the kindergarten year with each child bringing an apple to school on the first day and then using it in activities planned by the teacher. The past several years I have taken this opportunity to use the apples to introduce the class to project work. The opening discussion centered on experiences the children had with apples, e.g. picking apples at Grandma's or buying apples at roadside stands. The children carefully observed the apples, smelling, touching and tasting them. Using oil pastels, each child then selected an apple and made a representational drawing of it. As Phase I drew to a close, the children participated in a brainstorming session and listed all the ideas they had about what they wanted to learn about or do with apples.

Phase Two

Developing the Project

Whole class, small group or individual investigations began based on the questions from the brainstormed list. Children experimented and attempted to solve problems. Four different techniques were tried to make apple juice before there was any sign of success. Each new attempt reflected what the children had learned from the previous experiment. Thoughtful discussions also took place as the children tried to figure out what the stickers on the apples meant. They were satisfied with their interpretations. A bowling game was developed with the apples. Recycled juice cans were gathered to serve as bowling pins and the biggest roundest yellow apple was selected to be the bowling ball. This apple was badly bruised and the skin torn during this experiment. Afterwards it was placed on the display table and later played a key role in the development of this project. The class decided to bake an apple cake and were confident that they knew how to do it! Together they made a long list of ingredients. When preparing the batter, the group discussed each ingredient and decided how much to put in. (They seemed to make this cake by "feel" just like Grandma did!) When the children tasted the cake, they were thrilled with their creation.

Phase Three

Concluding the Project

After the majority of the initial questions and ideas on the brainstormed list had been completed, and the supply of apples was almost depleted, I had the children revisit the display table to reflect on the investigations and talk about what they had learned. In the process, one child picked up the "bowling ball" apple which was beginning to rot and decay. Underneath he discovered a worm and some small "brownish"looking things, which resulted in an incredibly powerful conversation as the class tried to make sense out of what they were observing. The end result was that the apple and worm were put into a jar which turned out to be the beginnings of a fruit fly farm. Instead of the project culminating, a Phase IV started.

Comments	The display illustrates the thought processes of young children and their approach to solving real problems. Descriptive conversations revealed the amazing wealth of knowledge children have. Snatches of dialogue uncovered how well children converse with each other when the "talk" is relevant. Examples highlight problems solved on an individual basis as well as in a group setting. Different strategies for solving problems are also noted. The success rate for solving problems in project work is very high because children are extremely interested in finding solutions to their own questions. The rare event of a fourth phase initiated in this project is noteworthy. Project work is never really complete, but in this case, the next phase was evident. The introductory conversation for this fourth phase was a classic example of the way children think and interpret the world in which they live.

Rocks Project

A Project by Second Grade Students
at Grafton Elementary School, Grafton, Illinois

Length of project: *2 months* ***Teachers:*** *Dot Schuler, Eileen Borgia*

Phase One

Beginning the Project

The teacher made a web to brainstorm the avenues of investigation the children might pursue. The teacher and the children told personal stories about rocks. They drafted, proofread, published, illustrated, and displayed the stories around the room. They answered open-ended questions about rocks: What sizes are they? What colors? What is good and bad about them? What are they made of? Where do they come from? What are they used for? Children wrote their ideas in their journals. Cooperative teams made charts of the responses, which served as early documentation of what they knew and wanted to know about rocks. Each child wrote a paragraph, responding to one of the questions, incorporating the five stages of writing—prewriting , first draft, revision, proofreading, and publishing.

Phase Two

Developing the Project

On our field experience to the hills adjacent to the school, we gathered data, measured, sketched, and studied rocks. Children discovered many formations in rocks. They hypothesized which was stronger, a tree growing out of a rock or the rock itself. Discoveries were documented. In activity centers, the children: painted; dictated stories; graphed the number of rocks in each collection; categorized rocks; and made Venn diagrams. One visiting expert demonstrated experiments to determine rock properties. Another expert, a geologist, donated samples of rocks. Our third expert helped the children construct a rock garden / terrarium. Children conducted experiments to determine properties of rocks. Two groups interviewed people in the school. Another team made a paper-mâché model of Devil's Tower, a National Monument in Wyoming. Jonathan froze a rock in water to observe changes and recorded findings on a flow chart. One group planted seeds in a glass and poured plaster of Paris over the top, to see if the seed would grow through the rock. Shannon and Kayla created a puppet show. Another group made a paper-mâché model of a volcano. Others made a rock from plaster of Paris mixed with small rocks. Two children were in charge of transforming our wall into a bluff.

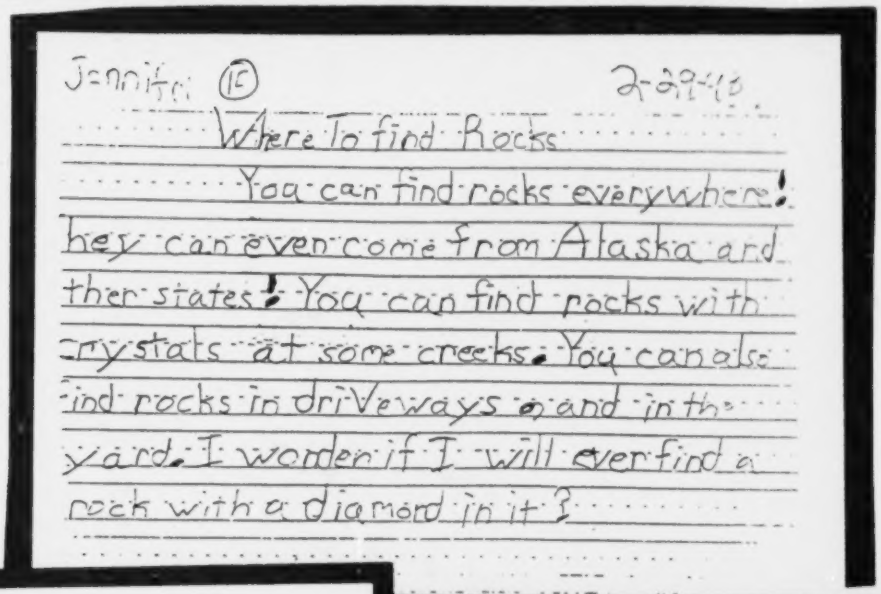
Phase Three

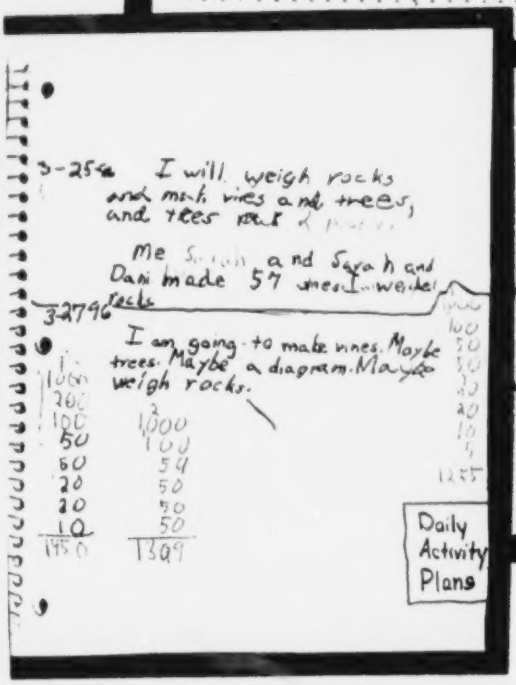
Concluding the Project

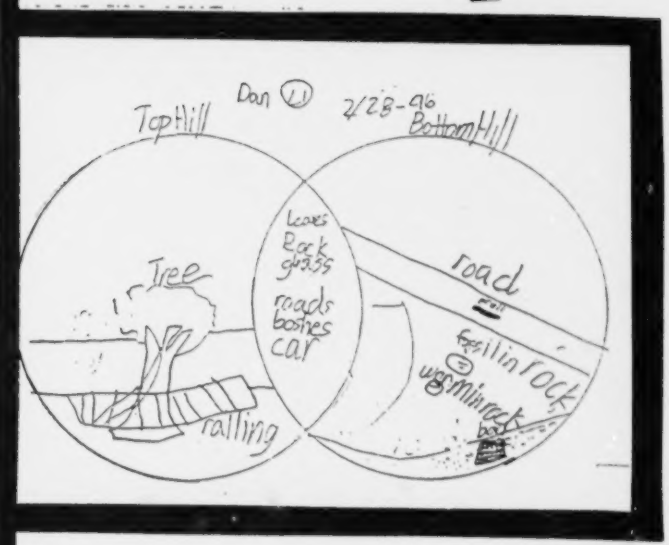
Our three-dimensional bluff, complete with paper vines, trees, small rocks, a cave at the bottom, and houses on top, was the focal point of our final display. In Nelson's words, "It was something for people to remember." Invitations were sent to parents, colleagues, and the community. Representations were stored in boulder folders. Each child selected two work samples for the display. Children's paintings and writings adorned all the walls. The project culminated on an evening in mid-April. The superintendent, principal, teachers, parents, siblings and neighbors (64 in all) listened to a child-produced puppet show on rocks, and then circulated in our crowded space, viewing our displays and listening to the children's explanations. Our volcano "erupted" many times, to the delight of our guests.

Comments

Throughout the project, reading, dialogue through journals, and discussions about investigations helped the children share their experiences. Children often chose to work in lieu of afternoon recess. When small group investigations were finished, they often helped others make vines and trees for the bluff, weigh large rocks on balance scales, or conduct small investigations of their own. Curriculum areas were easily incorporated, providing ample opportunities for children to apply skills. Parents and members of the community heard about the project, and occasionally sent in an object, a picture, or an offer of help. At the culmination, we heard positive comments, such as, "They did so much work," "This really turned out great," "You've worked so hard," "You don't even need explanations, the displays tell it all."


Jennifer (15) 2-29-96
Where To find Rocks
You can find rocks everywhere! hey can even come from Alaska and ther states! You can find rocks with crystals at some creeks. You can also ind rocks in driveways and in the yard. I worder if I will ever find a rock with a diamond in it?





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The MacDonald's Project

A Project by Three- and Four-Year-Old Children
at Valeska Hinton Early Childhood Education Center in Peoria, Illinois

Length of project: *11 weeks* ***Teachers:*** *Kathy Steinheimer and Tammy Shinkey*

Phase One

Beginning the Project

McDonald's restaurant was selected as a possible project topic because of the prominence of the restaurant in the children's lives. An initial web discussion, which centered on the latest Happy Meal toys, demonstrated the children's interest in McDonald's and the limits of their knowledge. The teachers used the discussion to help the children see the need for research. The children planned and carried out two trips to McDonald's to gather data needed to plan a McDonald's building, playground, and equipment. The children documented their research by preparing planning boards which included photographs of the McDonald's building, field drawings, drawings done while observing photographs of the McDonald's, and labels written by the children. During this phase, the children also explored how individual McDonald's food items, such as hamburgers, are prepared. All of the information gathered in this phase was used by the children in specific ways to build and operate their McDonald's.

Phase Two

Developing the Project

The children decided where to build their McDonald's and what materials to use. The initial McDonald's was made out of unit blocks and involved some intense play experiences. After the children spent several hours taping the blocks together to resolve the problem of stability and the structure still fell down, a child suggested that they build the next McDonald's out of boxes. This suggestion led to a planning session that included the drawing of formal floor plans by a small group. The children used their plans as guides when they constructed the walls, laid the bricks, made windows, and wallpapered walls. The children made representational drawings and paintings of McDonald's. The children built the appliances out of boxes and other found items. They used photographs of each actual appliance in the restaurant as references and included many details in their constructions such as the small, medium, and large, buttons found on the soda machine. During the construction of the appliances, the children began to explore how each appliance is actually used and continued to gather information about how each appliance is operated.

Phase Three

Concluding the Project

This phase of the McDonald's project focused on the actual operation of the McDonald's restaurant. The children's play during this phase was also intense. Children organized their own play and took turns working in the McDonald's, maintaining the restaurant's grounds, and visiting the McDonald's as patrons. During this phase, the children completed several books about their project including two books about the construction of the McDonald's building and appliances. The project was concluded when the children's documentation and the actual McDonald's construction was displayed in the center of the school.

Comments

The McDonald's project spanned an eleven-week period and would have lasted longer had the school year not ended. Significant growth was observed in every area of development. The children learned skills such as how to research a topic, work as a team, solve problems, and document their own learning. The children's growth in their ability to represent their learning through their drawing was especially impressive. Their work demonstrated the importance of never underestimating what young children can learn and do.

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Our School Project

A Project by Second Grade Students
at Strathcona Christian Academy, Alberta, Canada

Length of project: *8 weeks* ***Teachers:*** *Karen Schellert Wilson, Brenda Adams*

Phase One

Beginning the Project

The classroom teacher and consultant chose the topic of Our School for a project because it coordinated with the community topic in the social studies curriculum and would be interesting for the children. The focus of the topic was the building complex. This focus enabled the students to explore how the school and the church worked together on the same site. The teachers brainstormed ideas with the students. They began by showing the children a picture of the building complex. Students discussed what they knew about the building itself, the happenings there, the people, the work, and the activities. Each student was given a photocopy and invited to write word labels and to discuss their idea with a partner. They were also invited to write about happenings, people or parts of the building. We asked children to draw, paint,and survey others in the class to build a display of our experiences of the building. They made a graph to represent the people they knew who went only to the school, both school and church, and only to church. They shared their knowledge of people in the building who might be able to help them learn more.

Phase Two

Developing the Project

In the second phase of the project, the children discovered many things about the building which they had not known before. They interviewed the principal, the secretary, the custodian, and the business manager. The children explored the building itself, measuring and counting and doing observational drawings. They made field sketches and took field notes, learning about the jobs done by different people in the building. The children collected data about the buses, the office equipment, and the history of the school/church complex. They collected data by recording, surveying, questioning, and discussing. They represented their findings in stories, drawings, paintings, collages, models, dioramas, maps, time-lines, models and diagrams. Individual children found interesting tasks to work on for several days. For example, one child became interested in a scrap book of newspaper clippings collected over the past ten years. She chose some of the most interesting events and compiled information to display in a time-line to show the history of the building over the ten years since its construction.

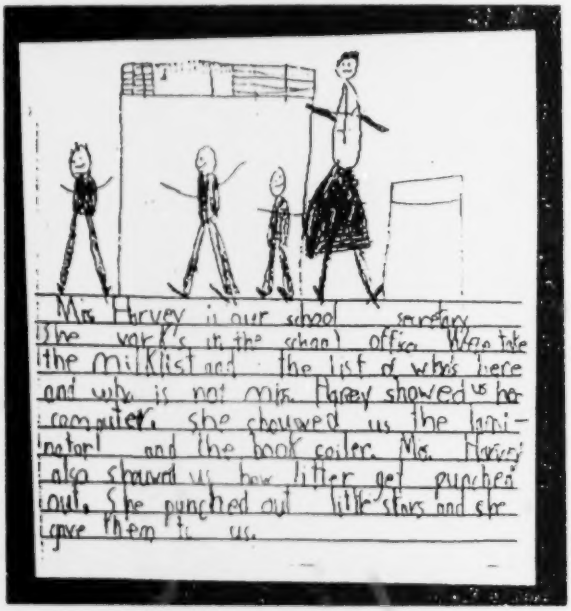
Phase Three

Concluding the Project

The work was collected and summarized in a class newspaper in the third phase of the project. Copies of the newspaper were given to all the people who had been interviewed. The parents were very interested in the newspaper and wanted to purchase multiple copies for other family members. The children wrote stories and poetry to extend and personalize their learning. This work was collected in class books and displayed on the class bulletin boards. The students also a made a class presentation to parents and to children from another classroom.

Comments

Several parents worked in the church/school complex. These parents were very helpful and interested in the children's research. The teachers were surprised how involved the children became in developing their work and extending it to make it more interesting and more challenging. Before the end of their first project these children were suggesting to the teachers how they could go further in their work. The children were also delighted with the interest shown by other adults and children in the building in what they were doing in their project..


Mrs. Harvey is our school secretary. She works in the school office. We do take the milklist and the list of who's here and who is not. Mrs. Harvey showed us her computer. She showed us the laminator and the book sealer. Mrs. Harvey also showed us how litter get punched out. She punched out little stars and she gave them to us.

The Building Construction Project

A Project by Second and Third Grade Students
at Caraway, Edmonton, Alberta, Canada

Length of project: *8 weeks* ***Teacher:*** *Darlene Williams*

Phase One

Beginning the Project

This phase was devoted to finding out what the children already knew about buildings and how well they were able to talk about and represent their experiences. I began our project by telling the children a simple story about my house. The children then shared stories about their homes. They were anxious to talk about the size of their house, the number of bedrooms, their own bedroom, their yards, etc. After sharing, the children then chose another way to represent their experiences with buildings. Some of the methods selected included drawing their house or a building, surveying classmates about the type of house they lived in, constructing a model of a house or building using various construction materials in the classroom, and writing a description of their house. Toward the end of Phase One we brainstormed a web of words and a list of questions that we had about buildings. These questions helped to focus and direct our project.

Phase Two

Developing the Project

Inviting guests to our class and going on field studies were integral parts of this phase of our project. Visitors included an engineer, an electrician, a window and door salesman, a teacher from Africa who talked to us about buildings in Africa, a parent who was having a house built, our school janitor, and a carpenter. Field study sites included a materials testing lab, garage, buildings and houses from 1886, an historic home, a house under construction; our school, and a bridge construction site. During guest visits and field studies the children took field notes of important information and observations. Writing experiences, individually or as a class, included research reports, letters, booklets on houses around the world, and stories about pioneer life and homes. They also completed surveys; developed, compared and described building materials; made observational drawings of building materials; compared houses in cold places with houses in hot places; and designed and tested building structures. The highlight of Phase Two was building a real 4' x 6' house. Throughout Phase Two many discussions and sharing sessions took place where the children had an opportunity to appreciate and comment on one another's work and to contribute new understandings to the group.

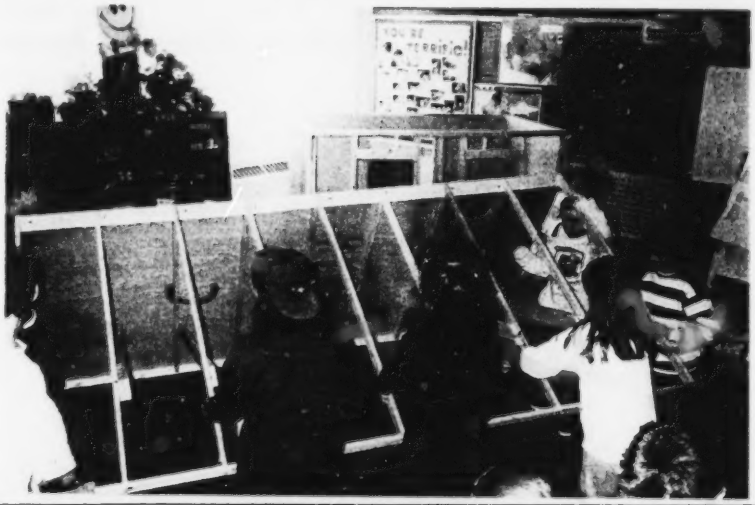
Phase Three

Concluding the Project

Phase Three was the culmination and celebration of the project. The children decided to have a house warming party for the house they had built and invited their parents and their grade 5/6 buddies. Invitations were made and sent out. The children also selected work from their folders to share with their guests. The class then spent a wonderful evening with the parents, celebrating all the learning that had taken place during our project. As a final culminating activity, the class made a photo album of the project. Children selected photos taken during the project and wrote a story about them. All the stories were bound together in an album entitled "The Learning Book of Buildings." This book, a wonderful souvenir of our Buildings project, has been read frequently by both children and parents.

Comments

Especially noteworthy in this project were the parent involvement, the role of the visiting experts, the culminating photo album, the ownership the children took of their work, and the quality of the work achieved for students in grade 2/3.



The Newspaper Project

A Project by Second and Third Grade Students
in Edmonton, Alberta,Canada

Length of project: 9 weeks ***Teacher: Karen Schellert Wilson***

Phase One

Beginning the Project

The opening activity with the children began with the teacher sharing her personal story of being in the newspaper. She brought newspaper clippings for the children to see and asked if the children had ever been in the newspaper. The children shared their stories. They thought of all the people they knew who had worked for a newspaper or had delivered newspapers. The children brainstormed thoughts about the topic. A topic web was made which was then used to record the development of the project throughout the nine weeks. With the help of the teacher the children brainstormed words and happenings with newspapers. The children then thought of activities through which they could represent and share what they knew about newspapers. The students made a list of things they knew about a newspaper and a list of questions they would like to answer.

Phase Two

Developing the Project

In the second phase of the project the children brought in and worked with copies of a variety of local and community newspapers. They looked through them to find out what types of information are included in newspapers. The children developed interview questions to ask a sports reporter from the Popular Press. The reporter helped the children write an article and the next day the reporter's editor came to the classroom and edited the piece for them. In doing so he explained how much redrafting is involved in being a journalist. The class invited a number of other experts to visit the classroom: printer, paper carrier, writer, etc. They made a field visit to the Popular Press building and Visions Media Center. Children used a variety of representations to record and share their learning. They developed a complex Venn diagram comparing the Popular Press with the Morning Star News.

Phase Three

Concluding the Project

In the third phase of the project, the teacher helped the children put their work together in their own class newspaper. The School Chronicle included their reports, drawings, diagrams, stories, and poems. The children edited each other's work, designed the layout of the paper, and published and sold it. They also developed a photo album with pictures and captions to tell the highlights of their project.

Comments

In the display, observers may wish to note the comments by the children in the photo album which they put together to assist them in remembering the project. The variety of technical language which these children acquired through the study of the newspaper may also interest viewers.

The Bicycle Project

A Project in a Multiage Five- and Six-Year-Old Class
at Valeska Hinton Early Childhood Center, Peoria, Illinois

Length of project: 7 weeks ***Teachers: Jolyn Blank, Suzi Boos***

Phase One

Beginning the Project

Some children in the class began writing about bikes in their journals. This experience led to an initial discussion about bikes. Stories were shared about bikes and individual parts of a bicycle were examined. The children wrote their stories. Some children examined and sketched the bike parts. The teacher suggested possible activities: polling the class and graphing results, sketching and painting a wheel, making maps of the school's bike paths, surveying parents about bikes, writing a class book about bike experiences, and sketching a bike. As children discussed the ideas and their knowledge of bikes, a topic web was developed. Children critiqued each other's work and reflected on their own work. They began to develop a list of questions and contribute suggestions about what they wanted to investigate and do next.

Phase Two

Developing the Project

The children had questions about how bikes were put together and how bicycles were fixed when they were broken. They began pulling non-fiction books from the collection to find out names of bike parts so they could refer to them easily. An owner of a local bike shop was invited to visit. To prepare for his visit, the children developed a list of questions. They discussed their own theories about the answers. The bike expert responded to the children's questions while demonstrating on a bike in the classroom. He also discussed bicycle safety. From this discussion, a group decided to develop a list of bicycle safety rules and post them. Others created a list of bike words and then created diagrams of bikes. The class began plans for creating a model of the school's bike paths. A group of children worked on this model for several weeks. They also worked with clay to create models of the bikes. In preparation for the field work, the children again created a list of questions. They continued to be fascinated with fixing bikes but also began to develop questions about the cost, parts, and types of bikes. The class visited a local bike shop where the children made field notes which included observational drawings, floor plans of the store, lists of items displayed, and a record of answers to questions.

Phase Three

Concluding the Project

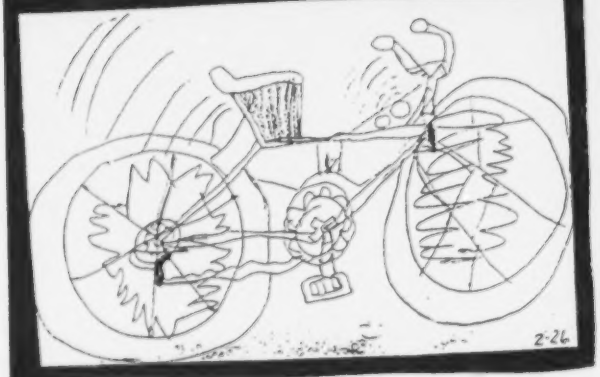
Using their field notes as a guide, the children created a large floor plan of the store. They decided to construct the show room. An area of the classroom was set aside for this purpose. They referred to their notes to list items they would need to construct the store. Some children worked on constructing air pumps, locks and keys, and a cash register. They created a display case and put price tags on the items for sale. We had meetings to discuss progress and children gave suggestions about what to do next. The children decided to construct the service area of the shop. They began to engage in dramatic play as bike mechanics, salespeople, cashiers, and customers.

Phase Three

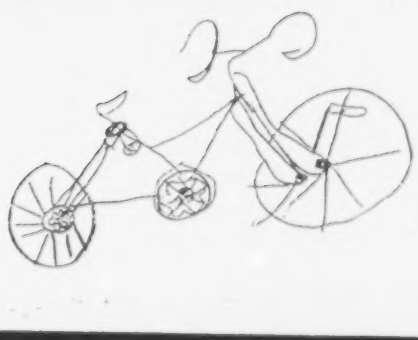
During this first project for these teachers and this class, the children gradually moved from following the teachers' leads to becoming directors of their own learning. They were critiquing each other's work, reflecting on their own work, and going back and doing things over to make them better. Notice the model of the bike paths. The children involved in this part of the project made their own plans, encountered problems, put them to the class for suggestions, and with this input returned to their work. Also note the growth in vocabulary from the questions generated before the visit to the class by the expert and the list generated by the class later in the project before they visited the bicycle shop.

As we plan for the visit from Joe Russel, a bike shop owner, the children brainstorm possible questions and develop theories regarding the answers to their questions. Some discussion:

Brittney: ***"How do you put the wheels on?"***
Dorian: ***"You tie them on with a bolt."***
Andrew: ***"How do you get the innertube in the wheel?"***
Dorian: ***"You have to screw it in."***
Andrew: ***"Put a knife through it and then use a screwdriver to pull it out"***
Lamar: ***"You can't pull it out with a screwdriver!"***
Ariane: ***""How do you put on that thing that covers the chain?"***
Dorian: ***"the thing that keeps the chain safe".***
Sarah: ***"A lock?"***
Ariane: ***"No, you'll see it at the store."***
Lakeshia: ***"How do you fix the chain?"***
Ariane: ***"You wrap the chain around this".***
Patience: ***"The chainwheel".***



In preparation for the trip to Illinois Cycle, the children discussed what they hoped to learn. From this discussion a contract was developed for each child. This was attached to the clipboards as a reminder to the children of their responsibilities. The information to be collected was, a floor plan of the store, a list of items in the store, observational drawings, and answer to the question they had. When deciding on their questions before the trip, they had their own theories of what the answers might be. This demonstrated a growing ability to form questions and explanations and thus think scientifically.



A sample discussion prior to our visit to Illinois Cycle:

Sarah: "How do they fix spokes when they break off?"
Brittany: "I know! You gotta get a new spoke and screw it on the wheel - the rim."
Ariane: "How do you fix a flat tire?"
Brittney: "You need to pump the tire or you can ask how much a tire is and get a new one."
Brittany: "You just have to pump it up."
Lamar: "You have to buy a new innertube. If you fill it up with too much air, it'll burst."
Brittney: "How do you put the pedals on?"
Justin: "Unscrew the chainwheel, take it off, then screw the pedals in".

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The Language of Projects:

A Glossary of Terms Used in the Project Approach

Culminating Activities — A variety of activities during Phase 3 of a project, through which children summarize and explain their work and their findings to others.

Documentation — Processes of recordkeeping and samples of children's work at different stages of completion that reveal how children worked and the learning involved in the processes.

Field Visits — Planned visits to sites under investigation during a project.

Observational Sketches — Drawings and sketches made while observing actual objects or places as a means of gathering descriptive or quantitative data.

Problem Solving — A process employed by all people at all levels of maturity of discovering or deducing new relationships among things observed or sensed. A method involving clear definition of the problem confronted, formation of hypothetical solutions, and tests of the hypotheses, until evidence warrants acceptance of a hypothesis.

Project — An extended, in-depth investigation of a topic, ideally one worthy of children's attention and energy. Projects involve children in conducting research on phenomena and events worth learning about in their own environments.

Web or Topic Web — A graphic representation of the ideas associated with a topic.

Webbing — The process of discussion among teachers and children as they create a web.

The Projects Web Site

Sylvia C. Chard
University of Alberta, Canada

URL (Internet Address): http://www.ualberta.ca/~schard/projects.htm

The Projects Web Site is designed to show successful project work. It provides teachers with a way to share a variety of projects carried out in preschool through junior high school settings. On the Projects Web Site we feature teachers' accounts of projects carried out in their classrooms. Graphics show topic webs, pictures of children actively engaged in projects, and samples of children's work. In the future links to other documents which discuss related issues such as assessment or parent involvement will be added.

A basic summary framework can be used to describe many different projects. On the Projects Web Site each story is introduced through a summary based on the framework outlined in the book *Engaging Children's Minds: The Project Approach*, by Lilian G. Katz and Sylvia C. Chard (Ablex, 1989). As the Web Site develops, the reader will be able to read a summary and then use the hypertext links to pursue particular details, or to see how the teacher resolved certain dilemmas or contributed to the discussion of particular issues.

On the Projects Web Site a reader will be able to find the summary of a project he or she is interested in, learn more details about the parts of the project which are of most interest, locate a discussion of the structural features of a project, and read a discussion of particular issues affecting teachers using the Project Approach.

A sample project. In one section of the Web Site there is a summary of the cafeteria project developed in the Child Study Centre of the University of Alberta Faculty of Education. The teachers and children studied the cafeteria in the Education Building. The summary provides an example of a project which has structural features which would be common to many other projects. Yet it also has some quite distinctive features.

Sharing ideas. Many teachers have expressed an interest in learning what other teachers have experienced as they have learned to work this way with the children in their classrooms. By means of this Web Site readers can access a large amount of detailed information about projects. Through the hypertext links they will easily be able to locate what they are most interested in and what is most personally relevant to them.

An invitation. This Web Site will be added to regularly as more stories are submitted for inclusion. Like all good World Wide Web sites, this site is always "under construction." This enhances its value and ensures that it remains responsive to teachers' current concerns. Instructions are provided on the Web Site for sending material to the editor. By sending in accounts of their own teaching, site visitors can become contributing members of an extensive network of teachers with similar interests and concerns.

PROJECTS-L

PROJECTS-L@postoffice.cso.uiuc.edu

PROJECTS-L is a Listserv discussion group for anyone interested in the use of the project approach in early childhood, elementary, and middle level education. For the purposes of this discussion list, the Project Approach is defined as "an in-depth study of a topic undertaken by a class, a group, or an individual child." Typically, the Project Approach refers to children's collaborative studies of "real world" topics that offer opportunities for observation and measurement of actual phenomena.

The PROJECTS-L discussion list is co-owned by Sylvia Chard of the University of Alberta and Dianne Rothenberg of the ERIC Clearinghouse on Elementary and Early Childhood Education. For more information on the project approach, visit Sylvia Chard's Project Approach home page at:

http://www.ualberta.ca/~schard/projects.htm

For more information on ERIC/EECE, visit the clearinghouse's World Wide Web site at:

http://ericps.ed.uiuc.edu/ericeece.html

Access to Internet electronic mail is needed to subscribe (at no charge) to this discussion group. To subscribe to PROJECTS-L, send an email message to:

LISTSERV@postoffice.cso.uiuc.edu

Leave the subject line of the message blank. In the body of the message, type:

subscribe PROJECTS-L Your-first-name Your-last-name

in the first line of the message area and send the message. Do not add your signature. You will be notified that you have been added to the list and provided with additional information at that time. Once you have subscribed to the discussion group, send messages that you want all list members to read to:

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ANNOUNCING

ENGAGING CHILDREN'S MINDS: The Project Approach

Summer Institutes at the Robert Allerton Conference Center
Monticello, Illinois

Join instructors Lilian G. Katz and Sylvia C. Chard, co-authors of Engaging Children's Minds: The Project Approach, for seminars on implementing the project approach and sharing experiences with the project approach.

About the Project Approach

The project approach is a three-phase program that applies hand-on techniques to help students learn basic literacy, numeracy, and social skills. In the Engaging Children's Minds summer institutes, educators develop a thorough understanding of the project approach and how to apply it in the classroom. The institutes are specially designed for classroom teachers, for those responsible for early childhood pre-service and in-service teacher education, and for faculty members in teacher education.

Session I: Learning the Project Approach July 29-August 3, 1997

This session helps participants understand the three phases of the Project Approach and how to implement them into the classroom. The Session I program includes lectures, audiovisual presentations, group discussions, practical fieldwork, and classroom activities.
Registration Fee: $925

Session II: Sharing Experiences in Using the Project Approach August 3-6, 1997

This session is intended for those who have experience in implementing the Project Approach or who are interested in teaching it to others. This session offers participants an opportunity to learn new project approaches to use in their own classrooms, and to share problems and insights with other experienced professionals.
Registration Fee: $295

Registration Information

Advance registration for all sessions is required by July 22, 1997. The registration fee includes: course materials; airport shuttle to and from the conference center; meals and lodging. Participants pay for their own travel and incidental expenses.

For a complete program brochure and registration information:
Call: (217) 333-2888 Email: nmulvany@uiuc.edu
Fax: (217) 333-9561

ERIC/EECE Digests Relevant to the Project Approach

The Project Approach
Lilian G. Katz

Integrate, Don't Isolate: Computers in the Early Childhood Classroom
Bernadette Caruso Davis and Daniel D. Shade

The Benefits of Mixed-Age Grouping
Lilian G. Katz

Encouraging Creativity in Early Childhood Classrooms
Carolyn Pope Edwards and Kay Wright Springate

The Contribution of Documentation to the Quality of Early Childhood Education
Lilian G. Katz and Sylvia C. Chard

Problem Solving in Early Childhood Classrooms
Joan Britz

Reggio Emilia: Some Lessons for U.S. Educators
Rebecca S. New

Resource Rooms for Children: An Innovative Curricular Tool
Sonja de Groot Kim

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ERIC DIGEST
April 1994 • EDO-PS-94-6

The Project Approach

Lilian G. Katz

Although project work is not new to early and elementary education (Sharan & Sharan, 1992), interest in involving children in group projects has been growing for several years. This renewed interest is based on recent research on children's learning (Kandel & Hawkins, 1992), a trend toward integrating the curriculum, and the impressive reports of group projects conducted by children in the pre-primary schools of Reggio Emilia (Edwards et al., 1993).

What is a Project?

A project is an in-depth investigation of a topic worth learning more about. The investigation is usually undertaken by a small group of children within a class, sometimes by a whole class, and occasionally by an individual child. The key feature of a project is that it is a research effort deliberately focused on finding answers to questions about a topic posed either by the children, the teacher, or the teacher working with the children. The goal of a project is to learn more about the topic rather than to seek right answers to questions posed by the teacher.

The Place of Project Work in the Curriculum

Advocates of the project approach do not suggest that project work should constitute the whole curriculum. Rather, they suggest that it is best seen as complementary to the more formal, systematic parts of the curriculum in the elementary grades, and to the more informal parts of the curriculum for younger children. Project work is not a separate subject, like mathematics; it provides a context for applying mathematical concepts and skills. Nor is project work an "add on" to the basics; it should be treated as integral to all the other work included in the curriculum.

Systematic instruction: (1) helps children *acquire* skills; (2) addresses *deficiencies* in children's learning; (3) stresses *extrinsic* motivation; and (4) allows teachers to direct the children's work, use their expertise, and specify the tasks that the children perform. *Project work*, in contrast: (1) provides children with opportunities to *apply* skills; (2) addresses children's *proficiencies*; (3) stresses *intrinsic* motivation; and (4) encourages children to determine what to work on and accepts them as experts about their needs. Both systematic instruction and project work have an important place in the curriculum.

For older children able to read and write independently, project work provides a context for taking initiative and assuming responsibility, making decisions and choices, and pursuing interests. For younger children, project work usually requires teacher guidance and consultation.

Themes, Units, Projects: Some Important Distinctions

Related to project work are themes and units. A theme is usually a broad concept or topic like "seasons," or "animals." Teachers assemble books, photographs, and other materials related to the theme through which children can gain new awareness. However, in theme work children are rarely involved in posing questions to be answered or taking initiative for investigation on the topic. Nevertheless, theme topics can provide good subtopics for project work.

Units usually consist of preplanned lessons and activities on particular topics the teacher considers important for the children to know more about. When providing information in units, the teacher typically has a clear plan about what concepts and knowledge the children are to acquire. As with themes, children usually have little role in specifying the questions to be answered as the work proceeds.

Both themes and units have an important place in the early childhood and elementary curriculum. However, they are not substitutes for projects, in which children ask questions that guide the investigation and make decisions about the activities to be undertaken. Unlike themes and units, the topic of a project is a real phenomenon that children can investigate directly rather than mainly through library research. Project topics draw children's attention to questions such as: How do things work? What do people do? and What tools do people use?

Activities Included in Project Work

Depending on the ages and skills of the children, activities engaged in during project work include drawing, writing, reading, recording observations, and interviewing experts. The information gathered is summarized and represented in the form of graphs, charts, diagrams, paintings and drawings, murals, models and other constructions, and reports to peers and parents. In the early years, an important component of a project is dramatic play, in which new understanding is expressed and new vocabulary is used.

Project work in the early childhood and elementary curriculum provides children with contexts for applying the skills they learn in the more formal parts of the curriculum,

and for group cooperation. It also supports children's natural impulse to investigate things around them.

The Phases of a Project

In *Phase 1* of a project, called *Getting Started* by Katz and Chard (1989), the children and teacher devote several discussion periods to selecting and refining the topic to be investigated. The topic may be proposed by a child or by the teacher.

Several criteria can be considered for selecting topics. First, the topic should be closely related to the children's everyday experience. At least a few of the children should have enough familiarity with the topic to be able to raise relevant questions about it. Second, in addition to basic literacy and numeracy skills, the topic should allow for integrating a range of subjects such as science, social studies, and language arts. A third consideration is that the topic should be rich enough so that it can be explored for at least a week. Fourth, the topic should be one that is more suitable for examination in school than at home; for example, an examination of local insects, rather than a study of local festivals.

Once the topic has been selected, teachers usually begin by making a web, or concept map, on the basis of "brainstorming" with the children. Displaying a web of the topic and associated subtopics can be used for continuous debriefing discussions as the project work proceeds. During preliminary discussions the teacher and children propose the questions they will seek to answer through the investigation. During the first phase of the project, the children also recall their own past experiences related to the topic.

Phase 2, Field Work, consists of the direct investigation, which often includes field trips to investigate sites, objects, or events. In Phase 2, which is the heart of project work, children are investigating, drawing from observation, constructing models, observing closely and recording findings, exploring, predicting, and discussing and dramatizing their new understandings (Chard, 1992).

Phase 3, Culminating and Debriefing Events, includes preparing and presenting reports of results in the form of displays of findings and artifacts, talks, dramatic presentations, or guided tours of their constructions.

Projects on Everyday Objects

One example of an investigation of an everyday object in the children's environments is a project called "All About Balls." A kindergarten teacher asked the children to collect from home, friends, relatives, and others as many old balls as they could. She developed a web by asking what the children might like to know about the balls. The children collected 31 different kinds of balls, including a gumball, a cotton ball, a globe of the earth, and an American football (which led to a discussion of the concepts of sphere, hemisphere, and cone). The children then formed subgroups to examine specific questions. One group studied the surface texture of each ball, and made rubbings to represent their findings; another measured the circumference of each ball with pieces of string; and a third tried to determine what each ball was made of.

After each group displayed and reported its findings to the others, the class made and tested predictions about the balls. The children and the teacher asked which balls would be the heaviest and which the lightest, how the weight of the balls was related to their circumference, which balls would roll the farthest on grass and gravel surfaces after rolling down an inclined plane, and which balls would bounce the highest. While the children tested their predictions, the teacher helped them explore such concepts as weight, circumference, and resistance. Following this direct investigation, the children engaged in a discussion about ball games. They discussed which balls were struck by bats, clubs, mallets, hands and feet, racquets, and so forth.

Conclusion

A project on a topic of real interest to children, such as the "All About Balls" project described here, involves children in a wide variety of tasks: drawing, measuring, writing, reading, listening, and discussing. From working on such a project, children learn a rich new vocabulary as their knowledge of a familiar object deepens and expands.

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Integrate, Don't Isolate! — Computers in the Early Childhood Curriculum

Bernadette Caruso Davis and Daniel D. Shade

Despite the promises and predictions made by educational researchers in the early 1980s, computers have not revolutionized education overnight, and few schools have invested wholeheartedly in instructional technology. Instead, in an effort to provide computer access to all students at an affordable cost despite the low ratio of computers to students, and because some critics feel there is a lack of quality software or that technology is too complex (Maddux, 1991), schools have often put computers in a single room where children use them once a week under a specialty teacher's supervision.

Unfortunately, this practice has undermined the most valuable aspect of the computer—its ability to cut across traditional subject boundaries as a practical and useful tool. Papert (1993) compares the isolation of computers in labs to the body's immune response to a foreign intruder; by removing computers from the classroom and relegating them to an isolated lab, schools have effectively minimized the potential impact computers can have on children's learning by turning the technology into a separate, unrelated subject area called "computer literacy." In this lab approach, Papert further argues, students have access to about 1/50th of a computer in school, far from the critical level needed for this technology to have a major impact on educational practices or learning experiences of children. The fatal flaw in taking computers out of the classroom is that any information learned about the computers today will be obsolete by tomorrow (Papert, 1993). Only when computers are integrated into the curriculum as a vital element for instruction and are applied to real problems for a real purpose, will children gain the most valuable computer skill—the ability to use computers as natural tools for learning (Shade & Watson, 1990).

Integrated Learning Systems versus True Integration

The term "integrated learning" has gained popularity over the past half-decade, evidenced by the appearance of numerous prepackaged reading, math, and science curricula on the pages of educational software catalogs. Unfortunately, these well-marketed packets are often no more than unrelated activities clustered around a single topic and give little consideration to the development of larger concepts or goals (Routman, 1991).

These misnamed integrated learning systems view a topic, such as dinosaurs or planets or fish, as only a series of superficially related activities and isolated skills linked casually together in sequence, much as a worm appears to be no more than a chain of loosely attached segments that can be severed and still function independently. Real knowledge is much more than a group of unrelated segments; each section supports a particular function, and all are related to one another. If the severed pieces are thrown into a box (brain) and shaken up without the support of their natural connections, neither the worm nor deep understanding will grow.

True integration respects the interrelationships of the disciplines—language, mathematics, science—as natural and necessary to achieving the goal of becoming educated about a particular topic. As in the "project" approach (Katz & Chard, 1989), children exercise all the developmental or curricular domains as they complete self-initiated projects individually or in small groups. For example, if the teacher selected the topic "Fish" for integrated study, the first step in planning might be to define several central concepts about fish that are meaningful and relevant to the students' lives. Next, activities might be chosen based on the desire to further explore these concepts. The teacher would then determine the most effective medium for supporting the activities selected. Sometimes computers will be the most appropriate material for concept exploration; at other times, they will not. Computers, like any learning material, are neither panacea nor pernicious (Clements, 1987).

Examples of Computer Use in Integrated Curricula

When exploration of a concept encourages students to write letters, stories, poems, or reports, using a word processor allows children to compose, revise, add, and remove text without being distracted by the fine motor aspects and tedium of forming letters. Research demonstrates that children who write on word processors compose longer and more complex stories, are less worried about mistakes, and are more willing to revise (Clements & Nastasi, 1993; Feeley et al., 1987).

The teacher implementing the unit on "Fish," for example, might use the *Kid Pix* program with very young children to construct a story through pictures and labels that can be narrated in the child's own voice by recording through the computer's microphone. With *Kid Works2*, students might write and draw what they have learned about fish and hear their composition read back. Slightly older students could use CD-ROM encyclopedias to gather data and *Storybook Weaver* to compose and illustrate original stories and reports about their topic. *My Words*, a simple program, can be used to write letters to local experts asking for information or

extending an invitation for a classroom visit. Any one of these programs provides an excellent medium for teachers to record a group report or story.

Microworlds

One of the most powerful uses teachers can make of computers is to provide students with a *microworld* (a microworld is software with which children play and discover concepts and cause-effect relationships included by the software developer for this purpose), a bridge between hands-on experiences and abstract learning, in which children can learn about a topic through exploration and experimentation (Papert, 1980; 1993). An example is *EZ Logo*, which is often used to introduce young children to geometric concepts in a playful way that is intuitive to them, just as one might use blocks to teach size and shape relations. Microworlds are developmentally appropriate software programs that are harder to find than are drill-and-practice programs, but that are much more valuable.

For example, *Odell Down Under* allows children to explore the ocean's ecological interactions by becoming a fish, with all the abilities and vulnerabilities of the particular species selected. *Zookeeper* and *San Diego Zoo Presents The Animals!* give students the chance to examine the habitats of several aquatic creatures. Graphics programs, such as *Colorforms Fun Set* provide students with the tools and props to construct their own underwater environment.

Teacher Roles in Computer-Enriched Classrooms

1. Instructor
When the computer is introduced into the classroom, an initial learning period occurs during which the children need time to become familiar and comfortable with the technology. It is during this period that the teacher needs to assume the most active role in instructing children, guiding them through new software and encouraging their exploration of the material.

2. Coach
As students gain experience with computers, the focal role held by the teacher gradually diminishes; children are able to perform tasks independently, and peers begin to take over the role of instructor. The teacher then moves into the role of facilitator, providing guidance and support when needed and ensuring appropriate behaviors, while control of the situation remains in the hands of the child.

3. Model
Children will be much more likely to use the computer as a practical, integrated tool for learning if they see the teacher doing the same. Using the computer during whole and small group instruction and for recording stories and producing classroom signs and charts are ways in which the teacher can be a highly visible user of technology.

4. Critic
Responsibilities of the teacher in the computer-enriched classroom begin before the computer is introduced to the students. In providing a rich, challenging, and appropriate learning environment, teachers must take an active role in selecting the software that will truly enhance children's learning and development.

Conclusion

Despite revolutionary advances in the field of educational computing, technology remains simply a tool. Potentially powerful and stimulating, the computer is only an inert object that can never be a substitute for the personal touch of the classroom teacher. How teachers implement computer use in their schools is critical. Without proper integration of computers into the curriculum, the benefits of technology to foster children's learning cannot be fully achieved, regardless of the creative potential of any software used.

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The Benefits of Mixed-Age Grouping

Lilian G. Katz

Goodlad and Anderson, who introduced the modern notion of the non-graded elementary school in 1959, raised our awareness of the fact that age is a crude indicator of what learning experiences children are ready for. Implementation of Goodlad and Anderson's ideas originally consisted largely of organizing children in groups by ability rather than by age, thereby homogenizing groups in a different way! We have come to understand that the benefits of mixed-age grouping rest on the assumption that the differences within a group of children can be a source of rich intellectual and social benefits. The terms "ungraded" and "nongraded" used by Goodlad and Anderson suggest what we do *not* do in mixed-age settings—separate children into grade groups by age—but they fail to describe what we try *to* do. That may be better conveyed by the use of the term "mixed-age grouping." A mixed-age group of children in which the children's age range is larger than a year—sometimes two years and sometimes more—is intended to optimize the educative potential of the mixture itself.

Although humans are not usually born in litters, we seem to insist that they be educated in them. The time that children spend in groups in schools and child care centers, particularly for preschoolers, amounts to replacing families and spontaneous neighborhood groups as contexts for child-to-child interaction for large portions of children's waking hours. More and more children are deprived of the information and models of competencies that once were available to them in natural mixed-age groups. The intention of mixed-age grouping in early childhood settings is to increase the heterogeneity of the group so as to capitalize on the differences in the experience, knowledge, and abilities of the children.

Opportunity to Nurture

When we ask a five-year-old to be tolerant of a four-year-old's first fumbling efforts to put on his or her jacket, or a six-year-old to be appreciative of a five-year-old's early efforts to read, we have the beginnings of parent education. Our young children need real contexts in which their dispositions to be nurturing can be manifested and strengthened. Furthermore, the young children who are encouraged, comforted and nurtured by older children will be able to emulate their older classmates when they themselves become the older ones in a group. Children need opportunities not only to observe and imitate a wide range of competencies, but also to find companions among their peers who match, complement, or supplement their interests in different ways.

Ways of Learning

Single-age groups seem to create enormous normative pressures on the children and the teacher to expect all the children to possess the same knowledge and skills. There is a tendency in a homogeneous age group to penalize the children who fail to meet normative expectations. There is no evidence to show that a group of children who are all within a twelve-month age range can be expected to learn the same things, in the same way, on the same day, at the same time. The wide range of knowledge and skills that exists among children within a single-age group suggests that whole-group instruction, if overused, may not best serve children's learning.

On the other hand, the wider the age span in a group, the wider the range of behavior and performance likely to be accepted and tolerated by the adults as well as by the children themselves. In a mixed-age group, a teacher is more likely to address differences, not only between children but within each individual child. In a mixed-age group, it is acceptable for a child to be ahead of his or her same-age peers in math, for example, but behind them in reading, or social competence, or vice versa.

Research on social benefits indicates that children very early associate different expectations with different age groups. Experiments have shown that even a three-year-old, when shown pictures of older and younger children in hypothetical situations, will assign different kinds of behavior to an older child than to a younger child. For instance, younger children assign to older children instructive, leadership, helpful, and sympathizing roles, whereas older children assign to younger children the need for help and instruction. Thus in the mixed-age group, younger children perceive the older ones as being able to contribute something, and the older children see the younger ones as in need of their contributions. These mutually reinforcing perceptions create a climate of expected cooperation beneficial to the children, and to the teachers who otherwise feel they are doing all the giving.

Increasing the age range automatically increases the number of teachers available, for younger children particularly. One potential problem that may arise when children assume the role of teacher to other children is that some older children will give younger ones incorrect information, poor suggestions, or wrong advice. When teachers observe such interactions, they can benefit from learning where both children need additional help, and they can correct any misinformation that has been exchanged.

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Results of experiments in which children worked in groups of three, either in same-age or mixed-age groups, have shown that in the latter, older children spontaneously facilitated other children's behavior. In a single-age triad, on the other hand, the same children spontaneously became domineering and tended to engage in one-upmanship. When groups of children ranging in age from seven to nine years or from nine to eleven years were asked to make decisions, they went through the processes of reaching a consensus with far more organizing statements and more leadership behavior than children in same-age groups. When the same children dealt with identical kinds of tasks in same-age groups, there were more reports of bullying behavior. Other prosocial behaviors such as help-giving and sharing were more frequent in mixed-age groups. Turn taking was smoother, and there was greater social responsibility and sensitivity to others in mixed-age groups than in single-age groups (Chase & Doan, 1994).

Observations of four- and five-year-olds in a group found that when the teacher asked the older children who were not observing the class rules to remind the younger ones what the rules were, the older children's own "self-regulatory behavior" improved. The older children could become quite bossy, but the teacher has a responsibility to curb the children's bossiness in any group.

Social Participation

In a mixed-age group, younger children are capable of participating and contributing to far more complex activities than they could initiate if they were by themselves. Once the older ones set up the activity, the younger ones can participate, even if they could not have initiated it.

Research indicates that mixed-age groups can provide a therapeutic environment for children who are socially immature. Younger children will less quickly rebuff an older immature child than the child's same-age mates. Younger children will allow an older child to be unsophisticated longer than will his or her age peers (Katz et al., 1990).

Intellectual Benefits

Even four-year-olds spontaneously change the way they speak to suit the age of the listener. They change the length of the sentence, the tone, and the words they use. Studies of cognitive development suggest that cognitive conflict arises when interacting children are at different levels of understanding, regardless of their ages. If two children are working on a task that one understands well and another does not, the latter is likely to learn from the former if he or she understands the task very well, and if they argue. Only if one understands something very well can explanations be varied during argument (Katz et al., 1990).

Risks and Concerns

Every method of grouping children has risks. One concern with mixed-age grouping is ensuring that younger children are not overwhelmed by older or more competent ones. Teachers have an important role to play in maximizing the potential benefits of the age mixture by encouraging children to turn to each other for explanations, directions, and comfort. Teachers can also encourage older children to read stories to younger ones, and to listen to younger students read.

Teachers can also encourage older children to take responsibility for an individual younger child or for younger children in general. Teachers can encourage older children not to gloat over their superior skills, but to take satisfaction in their competence in reading to younger children, in writing things down for them, in explaining things, in showing them how to use the computer, in helping them find something, in helping them get dressed to go outdoors, and so forth.

Teachers can show older children how to protect themselves from being pestered by younger children, for example, by saying to the younger children, "I can't help you right this minute, but I will as soon as I finish what I am doing." Teachers can also help younger children learn to accept their own limitations and their place in the total scheme of things, as well as encourage older children to think of roles and suitable levels that younger ones could take in their work or in their activities. The basic expectation is that the children will be respectful and caring of one another (Lipsitz, 1995).

When teachers discourage older children from calling younger ones "cry babies" or "little dummies," they help resist the temptation of age stereotyping. Every once in a while one can observe a teacher saying to a misbehaving first grader something like "that behavior belongs in kindergarten." The teacher still will expect the first grader to be kind and helpful to the kindergartners during recess, though he or she has just heard kindergartners spoken of in a condescending way! A mixed-age group can provide a context in which to teach children not only to appreciate a level of understanding or behavior they themselves recently had, but also to appreciate their own progress and to develop a sense of the continuity of development.

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Encouraging Creativity in Early Childhood Classrooms

Carolyn Pope Edwards and Kay Wright Springate

Adults are often amazed by young children's unexpected perceptions of the world and the unique ways in which they express their imagination. We also know, however, that children usually need adult support to find the means and the confidence to bring forth their ideas and offer them, day after day, to teachers, parents, and friends. This digest considers both teacher-initiated and child-initiated strategies for enhancing young children's self-expression and creativity.

While trying to explore new and better ways of bringing the arts to young children and children to the arts, it helps to examine not only what American teachers do but also what teachers in other nations have discovered. Models developed in other countries, such as in the preschools of Reggio Emilia, Italy, can be a universal resource.

How Young Children Learn

In Reggio Emilia, Italy, home of some of the best preschools in the world, children grow up surrounded by centuries-old masterpieces of architecture, painting, and sculpture. Citizens are especially proud of their artistic heritage, and art becomes a natural vehicle in educational approaches for helping children explore and solve problems. In the American context, science and technology are specially regarded. Many Americans acquire an interest in tools and machines and enjoy trying to make things run better, fixing things, and solving functional problems. An investigation of "what's inside" and "how things work" makes a natural starting point for in-depth work that integrates art with science, social studies, and literacy activity.

The documentation of young children's work provided by Reggio Emilia educators highlights young children's amazing capabilities and indicates that it is through the unity of thinking and feeling that young children can explore their world, represent their ideas, and communicate with others at their highest level. When educators fully understand how exploration, representation, and communication feed one other, they can best help children achieve this potential.

Several aspects of young children's learning are important to consider when thinking about art and creative activities (Edwards & Hiler, 1993). First, young children are developmentally capable of classroom experiences which call for (and practice) higher level thinking skills, including *analysis* (breaking down material into component parts to understand the structure, seeing similarities and differences); *synthesis* (putting parts together to form a new whole, rearranging, reorganizing); and *evaluation* (judging the value of material based on definite criteria).

Second, young children want and need to express ideas and messages through many different expressive avenues and symbolic media. Young children form mental images, represent their ideas, and communicate with the world in a combination of ways. They need increasing competence and integration across formats including words, gestures, drawings, paintings, sculpture, construction, music, dramatic play, movement, and dance. Through sharing and gaining others' perspectives, and then revisiting and revising their work, children move to new levels of awareness. Teachers act as guides, careful not to impose adult ideas and beliefs upon the children.

Third, young children learn through meaningful activities in which different subject areas are integrated. Open-ended discussions and long-term activities bring together whole-language activities, science, social studies, dramatic play, and artistic creation. Activities that are meaningful and relevant to the child's life experiences provide opportunities to teach across the curriculum and assist children in seeing the interrelationships of things they are learning.

Teachers have many opportunities to integrate curriculum. For example, the arrival of a new sibling is a common occurrence. Teachers might ask parents of children in their class to contribute photographs of the children as infants, toddlers, and preschoolers, so that the children who are interested can make scrapbooks. If such photos are unavailable, the children can draw or cut pictures from magazines, or dictate stories about remembered foods, toys, or bedroom furnishings. Such activities, designed to help a child deal with a new baby, also help children to use spoken and written language and to select and organize materials.

Fourth, young children benefit from in-depth exploration and long-term, open-ended projects which are started either from a chance event, a problem posed by one or more children, or an experience planned and led in a flexible way by teachers (Edwards & Springate, 1993; Clark, 1994). The adults act as resource persons, problem-posers, guides, and partners to the children in the

process of discovery and investigation. They take their cues from children through careful listening and observation, and know when to encourage risk-taking and when to refrain from interfering.

What Teachers Can Do

Given what is known about young children's learning and about their amazing competence to express their visions of themselves and their world, how can the classroom be modified to best support children's emerging creativity?

Time. Creativity does not follow the clock. Children need extended, unhurried time to explore and do their best work. They should not be artificially rotated, that is, asked to move to a different learning center or activity when they are still productively engaged and motivated by a piece of creative work.

Space. Children need a place to leave unfinished work to continue the next day, and a space that inspires them to do their best work. A barren, drab environment is not conducive to creative work. Rather, children's work is fostered by a space that has natural light, harmonious colors, comfortable and child-sized areas, examples of their own and others' work (not only their classmates, but as appropriate, also their teachers' and selected adult artists), and inviting materials.

Materials. Without spending great amounts of money, teachers can organize wonderful collections of resource materials that might be bought, found, or recycled. These materials can include paper goods of all kinds; writing and drawing tools; materials for constructions and collages, such as buttons, stones, shells, beads, and seeds; and sculpting materials, such as play dough, goop, clay, and shaving cream. These materials are used most productively and imaginatively by children when they themselves have helped select, organize, sort, and arrange them.

Climate. The classroom atmosphere should reflect the adults' encouragement and acceptance of mistakes, risk-taking, innovation, and uniqueness, along with a certain amount of mess, noise, and freedom. This is not a matter of chaos, or of tight control, but instead something in between. In order to create such a climate, teachers must give themselves permission to try artistic activity themselves, even when they have not been so fortunate as to have had formal art training or to feel they are naturally "good at art." Through workshops, adult education classes, or teamwork with an art teacher or parent, classroom teachers can gain the confidence for, and experience the pleasure of, venturing some distance down the road of self-expression in a medium in which they did not know they could be successful. Their skill will then translate into the work with the children.

Occasions. Children's best and most exciting work involves an intense or arousing encounter between themselves and their inner or outer world. Teachers provide the occasions for these adventures. Children find it hard to be creative without any concrete inspiration. Instead, they prefer to draw on the direct evidence of their senses or memories. These memories can become more vivid and accessible through the teacher's provocations and preparations. For example, teachers can encourage children to represent their knowledge and ideas before and after they have watched an absorbing show, taken a field trip, or observed and discussed an interesting plant or animal brought into class. Teachers can put up a mirror or photos of the children in the art area, so children can study their faces as they draw their self-portrait. Teachers can offer children the opportunity to check what they have drawn against an original model and then let them revise and improve upon their first representation.

Conclusion

All of these activities can be combined with the teachers' goals of gradually introducing children to new art materials and techniques. Finally, there is no "one right way" for helping young children achieve their creative potential. Teachers will need to continue to experiment and test alternatives to see what is effective in their situation.

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The Contribution of Documentation to the Quality of Early Childhood Education

Lilian G. Katz and Sylvia C. Chard

The municipal preprimary schools in the northern Italian city of Reggio Emilia have been attracting worldwide attention for more than a decade. The reasons are many and have been discussed by a number of observers and visitors (see Edwards, Gandini, & Forman, 1993, and Katz & Cesarone, 1994.) While interest in what is now called the "Reggio Emilia Approach" is focused on many of its impressive features, perhaps its unique contribution to early childhood education is the use of the documentation of children's experience as a standard part of classroom practice.

Documentation, in the forms of observation of children and extensive recordkeeping, has long been encouraged and practiced in many early childhood programs. However, compared to these practices in other traditions, documentation in Reggio Emilia focuses more intensively on children's experience, memories, thoughts, and ideas in the course of their work. Documentation practices in Reggio Emilia preprimary schools provide inspiring examples of the importance of displaying children's work with great care and attention to both the content and aesthetic aspects of the display.

Documentation typically includes samples of a child's work at several different stages of completion; photographs showing work in progress; comments written by the teacher or other adults working with the children; transcriptions of children's discussions, comments, and explanations of intentions about the activity; and comments made by parents. Observations, transcriptions of tape-recordings, and photographs of children discussing their work can be included. Examples of children's work and written reflections on the processes in which the children engaged can be displayed in classrooms or hallways. The documents reveal how the children planned, carried out, and completed the displayed work.

It seems to us that high-quality documentation of children's work and ideas contributes to the quality of an early childhood program in at least six ways.

1. Enhancement of children's learning

Documentation can contribute to the extensiveness and depth of children's learning from their projects and other work. As Loris Malaguzzi points out, through documentation children "become even more curious, interested, and confident as they contemplate the meaning of what they have achieved" (Malaguzzi, 1993, p. 63). The processes of preparing and displaying documentaries of the children's experience and effort provides a kind of debriefing or re-visiting of experience during which new understandings can be clarified, deepened, and strengthened. Observation of the children in Reggio Emilia preprimary classes indicates that children also learn from and are stimulated by each other's work in ways made visible through the documents displayed.

The documentation of the children's ideas, thoughts, feelings, and reports are also available to the children to record, preserve, and stimulate their memories of significant experiences, thereby further enhancing their learning related to the topics investigated. In addition, a display documenting the work of one child or of a group often encourages other children to become involved in a new topic and to adopt a representational technique they might use. For example, Susan and Leroy had just done a survey of which grocery stores in town are patronized by the families of their classmates. When Susan wanted to make a graph of her data, she asked Jeff about the graph displayed of his survey about the kinds of cereal their class ate for breakfast. With adult encouragement, children can be resourceful in seeking the advice of classmates when they know about the work done by the other children throughout the stages of a project.

2. Taking children's ideas and work seriously

Careful and attractive documentary displays can convey to children that their efforts, intentions, and ideas are taken seriously. These displays are not intended primarily to serve decorative or show-off purposes. For example, an important element in the project approach is the preparation of documents for display by which one group of children can let others in the class working on other aspects of the topic learn of their experience and findings. Taking children's work seriously in this way encourages in them the disposition to approach their work responsibly, with energy and commitment, showing both delight and satisfaction in the processes and the results.

3. Teacher planning and evaluation with children

One of the most salient features of project work is continuous planning based on the evaluation of work as it progresses. As the children undertake complex individual or small group collaborative tasks over a period of several days or weeks, the teachers examine the work each day and discuss with the children their ideas and the possibilities of new options for the following days. Planning decisions can be made on the basis of what individual or groups of children have found interesting, stimulating, puzzling, or challenging.

For example, in an early childhood center where the teachers engage weekly—and often daily as well—in review of children's work, they plan activities for the following week collaboratively, based in part on their review. Experiences and activities are not planned too far in advance, so that new strands of work can emerge and be documented. At the end of the morning or of the school day, when the children are no longer present, teachers can reflect on the work in progress and the discussion which surrounded it, and consider possible new directions the work might take and what suggestions might support the work. They can also become aware of the participation and development of each individual child. This awareness enables the teacher to optimize the children's chances of representing their ideas in interesting and satisfying ways. When teachers and children plan together with openness to each other's ideas, the activity is likely to be undertaken with greater interest and representational skill than if the child had planned alone, or the teacher had been unaware of the challenge facing the child. The documentation provides a kind of ongoing planning and evaluation that can be done by the team of adults who work with the children.

4. Parent appreciation and participation

Documentation makes it possible for parents to become intimately and deeply aware of their children's experience in the school. As Malaguzzi points out, documentation "introduces parents to a quality of knowing that tangibly changes their expectations. They reexamine their assumptions about their parenting roles and their views about the experience their children are living, and take a new and more inquisitive approach toward the whole school experience" (Malaguzzi, 1993, p. 64).

Parents' comments on children's work can also contribute to the value of documentation. Through learning about the work in which their children are engaged, parents may be able to contribute ideas for field experiences which the teachers may not have thought of, especially when parents can offer practical help in gaining access to a field site or relevant expert. In one classroom a parent brought in a turkey from her uncle's farm after she learned that the teacher was helping the children grasp what a real live turkey looked like.

The opportunity to examine the documentation of a project in progress can also help parents to think of ways they might contribute their time and energy in their child's classroom. There are many ways parents can be involved: listening to children's intentions, helping them find the materials they need, making suggestions, helping children write their ideas, offering assistance in finding and reading books, and measuring or counting things in the context of the project.

5. Teacher research and process awareness

Documentation is an important kind of teacher research, sharpening and focusing teachers' attention on children's plans and understandings and on their own role in children's experiences. As teachers examine the children's work and prepare the documentation of it, their own understanding of children's development and insight into their learning is deepened in ways not likely to occur from inspecting test results. Documentation provides a basis for the modification and adjustment of teaching strategies, and a source of ideas for new strategies, while deepening teachers' awareness of each child's progress. On the basis of the rich data made available through documentation, teachers are able to make informed decisions about appropriate ways to support each child's development and learning.

The final product of a child's hard work rarely makes possible an appreciation of the false starts and persistent efforts entailed in the work. By examining the documented steps taken by children during their investigations and representational work, teachers and parents can appreciate the uniqueness of each child's construction of his or her experience, and the ways group efforts contribute to their learning.

6. Children's learning made visible

Of particular relevance to American educators, documentation provides information about children's learning and progress that cannot be demonstrated by the formal standardized tests and checklists we commonly employ. While U.S. teachers often gain important information and insight from their own first-hand observations of children, documentation of the children's work in a wide variety of media provides compelling public evidence of the intellectual powers of young children that is not available in any other way that we know of.

Conclusion

The powerful contribution of documentation in these six ways is possible because children are engaged in absorbing, complex, interesting projects worthy of documentation. If, as is common in many traditional classrooms around the world, a large proportion of children's time is devoted to making the same pictures with the same materials about the same topic on the same day in the same way, there would be little to document which would intrigue parents and provide rich content for teacher-parent or child-parent discussion!

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ERIC Digest

EDO-PS-93-1

Problem Solving in Early Childhood Classrooms

Joan Britz

Problem solving is the foundation of a young child's learning. It must be valued, promoted, provided for, and sustained in the early childhood classroom. Opportunities for problem solving occur in the everyday context of a child's life. By observing the child closely, teachers can use the child's social, cognitive, movement, and emotional experiences to facilitate problem solving and promote strategies useful in the lifelong process of learning.

Learning Through Problem Solving

By exploring social relationships, manipulating objects, and interacting with people, children are able to formulate ideas, try these ideas out, and accept or reject what they learn. Constructing knowledge by making mistakes is part of the natural process of problem solving. Through exploring, then experimenting, trying out a hypothesis, and finally, solving problems, children make learning personal and meaningful. Piaget states that children understand only what they discover or invent themselves (1963). It is this discovery within the problem solving process that is the vehicle for children's learning. Children are encouraged to construct their own knowledge when the teacher plans for problem solving; bases the framework for learning in problem solving; and provides time, space, and materials.

The Teacher's Role

Changing through problem solving is modeled by adults (Bloom, Sheerer, and Britz, 1991) and facilitated by the teacher in the classroom environment. When teachers articulate the problems they face and discuss solutions with children, children become more aware of the significance of the problem-solving process. Being a problem solver is modeled by the teacher and emulated by the children. The teacher's role is two-fold: first, to value the process and be willing to trust the learner, and second, to establish and maintain a classroom environment that encourages problem solving. It is the attitude of the teacher that must change first in the problem-solving classroom. Values and goals must be clearly defined to include a child-centered curriculum, the development of communication skills, promotion of cooperative learning, and inclusion of diverse ideas.

The teacher must be willing to become a learner, too. By being curious, observing, listening, and questioning, the teacher shares and models the qualities that are valued and promoted by the problem-solving process.

Planning for Problem Solving

A curriculum that accommodates a variety of developmental levels as well as individual differences in young children sets the stage for problem solving (Bredekamp, 1987). Choices, decision making, and a curriculum framework that integrates learning, such as Katz and Chard's project method (1989), are especially appropriate for young learners. The project approach facilitates cooperative learning and promotes diverse ideas. Donna Ogle's K-W-L (what you KNOW, what you WANT to know, and what you have LEARNED) is another method of organizing work that promotes problem solving. Themes, units, webbing, and the KWL method are all ways of organizing curriculum that can support problem solving (Britz and Richard, 1992). Beginning with the needs and interests of the children, problem solving develops from meaningful experiences important to the children. The teacher-designed curriculum provides the classroom basis for these experiences.

For example, a second grade investigation of waste materials from a classroom led one group of young children to explore the topic in an integrated way. Reading, writing, counting, measuring, interviews of community people, and science experiments were planned, initiated, and reported. Solutions to many problems posed during the investigation were tried out and some were found to be successful. Through group work, individuals were able to participate and communicate as cognitive and social needs were met. Each child, at individual levels and in individual ways, was successful within the group experience. Problem solving empowers children.

Providing for Problem Solving

Problem solving is a skill that can be learned and must be practiced. It is facilitated by a classroom schedule that provides for integrated learning in large blocks of time, space for ongoing group projects, and many open-ended

materials. The teacher provides the time, space, and materials necessary for in-depth learning.

- Time: Teachers can provide for problem solving by enlarging blocks of learning time during the school day. Because making choices, discussing decisions, and evaluating mistakes takes time, large time blocks best suit the problem-solving process. It is important that children know they have time to identify and solve problems.
- Space: Projects and group meetings may require an assessment of classroom space. Moving desks and tables together facilitates communication and cooperation in the classroom. Once the teacher has observed the patterns of traffic in the classroom, equipment can be moved or eliminated to promote problem solving.
- Materials: The open-ended materials that are needed for the construction and concrete solving of problems should be safe, durable, and varied. Well-marked storage units should be easily accessible to children, and materials should be available for ongoing exploration and manipulation. Access to a variety of materials encourages children to use materials in new and diverse ways. This freedom promotes problem solving.

The Problem-Solving Model

Individuals or groups can solve problems. Group problem solving is important to young children because many diverse ideas are generated. Both individual and group processes should be included in the early childhood classroom. Becoming skillful at problem solving is based on the understanding and use of sequenced steps. These steps are:

1. Identifying the problem,
2. Brainstorming a variety of solutions,
3. Choosing one solution and trying it out, and
4. Evaluating what has happened.

Often the most difficult of these steps is identifying the problem. If Bill cries, "Alice is hitting me," the problem to be solved is not the hitting but, rather, *the reason why* Alice is hitting Bill. Therefore, the investigation of solutions must relate to the cause of the problem instead of its effect. Brainstorming gives children practice in communication, negotiation, and cooperation skills. Learning to express individual ideas in a diverse society is important. By choosing and trying out a solution, learners develop empathy, come to consensus, and share the responsibility of the decision. These are valued learnings in a democratic society. Finally, by evaluating the problem-solving process, children assess their choices and mistakes and learn to be independent evaluators of their work.

The process of problem solving—making choices and learning from them—is facilitated by teachers who observe, listen, and ask open-ended questions that further the process: questions such as, "What will happen if...?" and "What other ways can you think of...?" Problem solving becomes a cycle of learning when mistakes are made and different solutions have to be tried. This discovery process allows children to construct their own learnings. Most problems have more than one solution; some problems cannot be solved. Experiences with these sorts of problems promote learning in young children.

Choosing Good Problems

Goffin (1985) provides teachers with guiding questions that will help them identify appropriate problems for young children. Some of these are:

- Is the problem meaningful and interesting?
- Can the problem be solved at a variety of levels?
- Must a new decision be made?
- Can the actions be evaluated?

Problem solving is a way to make sense of the environment and, in fact, control it. The process allows children in an increasingly diverse world to be active participants and to implement changes. By including problem solving in the early childhood classroom, we equip children with a lifelong skill that is useful in all areas of learning.

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ERIC Digest

EDO-PS-93-3

Reggio Emilia: Some Lessons for U.S. Educators

Rebecca S. New

During the past several decades, U.S. educators have increasingly turned their attention to other nations' policies and practices to inform deliberations on American child care and early education. One internationally acclaimed program that supports and challenges American notions of appropriate early education is the municipal early childhood program in Reggio Emilia, Italy. For the past 25 years, this affluent northern Italian community has committed 12% of the town budget to the provision of high quality child care for children six years and under. Today the community boasts 22 preprimary schools and 14 infant-toddler centers serving about half of the city's young children.

There is much about Reggio Emilia's approach to child care and education that distinguishes it from other efforts both inside and outside of Italy and that attracts worldwide attention. Of special interest is the emphasis on children's *symbolic languages* in the context of a project-oriented curriculum. This feature has been well-documented in two traveling exhibitions. The Reggio Emilia approach is made possible through a carefully articulated and collaborative approach to the care and education of young children.

Community Support and Parental Involvement

Reggio Emilia's tradition of community support for families with young children expands on Italy's cultural view of children as the collective responsibility of the state. In Reggio Emilia, the infant/toddler and preprimary program is a vital part of the community, as reflected in the high level of financial support. Community involvement is also apparent in citizen membership in *La Consulta*, a school committee that exerts significant influence over local government policy.

The parents' role mirrors the community's, at both the schoolwide and the classroom level. Parents are expected to take part in discussions about school policy, child development concerns, and curriculum planning and evaluation. Because a majority of parents—including mothers—are employed, meetings are held in the evenings so that all who wish to participate can do so.

Administrative Policies and Organizational Features

The administration of the Reggio Emilia early childhood program is moderately representative of other Italian community-based programs. A head administrator, who reports directly to the town council, works with a group of *pedagogista* (curriculum team leaders), each of whom coordinates the efforts of teachers from five or six centers. Each center is staffed with two teachers per classroom (12 children in infant classes, 18 in toddler classes, and 24 in preprimary classes), one *atelierista* (a teacher trained in the arts who works with classroom teachers in curriculum development and documentation), and several auxiliary staff. There is no principal, nor is there a hierarchial relationship among the teachers. This staffing plan, coupled with the policy of keeping the same group of children and teachers together for a period of three years, facilitates the sense of community that characterizes relationships among adults and children.

Other features of Reggio Emilia's approach to early education that have generated interest among American educators include the concept of teachers as learners, the importance attributed to the role of the environment, the use of long-term projects with small groups of children as the major curriculum strategy, and the emphasis on children's many symbolic languages.

Teachers as Learners

Teachers' long-term commitment to enhancing their understanding of children is at the crux of the Reggio Emilia approach. Their resistance to the American use of the term model to describe their program reflects the continuing evolution of their ideas and practices. They compensate for the meager preservice training of Italian early childhood teachers by providing extensive staff development opportunities, with goals determined by the teachers themselves. Teacher autonomy is evident in the absence of teacher manuals, curriculum guides, or achievement tests. The lack of externally imposed mandates is joined by the imperative that teachers become skilled observers of children in order to inform their curriculum planning and implementation.

Teachers routinely divide responsibilities in the class so that one can systematically observe, take notes, and record conversations between children. These observations are shared with other teachers and the *atelierista* and parents in curriculum planning and evaluation. Teachers of several schools often work and learn together under the leadership of the *pedagogista* as they explore ways of expanding on children's spontaneous activities.

The Role of the Environment

The organization of the physical environment is crucial to Reggio Emilia's early childhood program. Major aims in the planning of new spaces and the remodeling of old ones include the integration of each classroom with the rest of the school, and the school with the surrounding community. Classrooms open to a center piazza, kitchens are open to view, and access to the surrounding community is assured through wall-size windows, courtyards, and doors to the outside in each classroom. Entries capture the attention of both children and adults through the use of mirrors (on the walls, floors, and ceilings), photographs, and children's work accompanied by transcriptions of their discussions. These same features characterize classroom interiors, where displays of project work are interspersed with arrays of found objects and classroom materials. In each case, the environment informs and engages the viewer.

Other supportive elements of the environment include ample space for supplies, frequently arranged to draw attention to their

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aesthetic features. In each classroom there are studio spaces in the form of a large, centrally located atelier and a smaller mini-atelier, and clearly designated spaces for large- and small-group activities. Throughout the school, there is an effort to create opportunities for children to interact. Thus, the single dress-up area is in the center piazza; classrooms are connected with phones, passageways or windows; and lunchrooms and bathrooms are designed to encourage playful encounters. It is no wonder that Reggio Emilia teachers refer to the environment as *our third teacher.*

Long-Term Projects as Vehicles for Learning

The curriculum is characterized by many features advocated by contemporary research on young children, including real-life problem-solving among peers, with numerous opportunities for creative thinking and exploration. Teachers often work on projects with small groups of children, while the rest the class engages in a wide variety of self-selected activities typical of preschool classrooms.

The projects that teachers and children engage in are distinct in a number of ways from those that characterize American teachers' conceptions of unit or thematic studies. The topic of investigation may derive directly from teacher observations of children's spontaneous play and exploration. Project topics are also selected on the basis of an academic curiosity or social concern on the part of teachers or parents, or serendipitous events that direct the attention of the children and teachers. Reggio teachers place a high value on their ability to improvise and respond to children's predisposition to enjoy the unexpected. Regardless of their origins, successful projects are those that generate a sufficient amount of interest and uncertainty to provoke children's creative thinking and problem-solving and are open to different avenues of exploration. Because curriculum decisions are based on developmental and sociocultural concerns, small groups of children of varying abilities and interests, including those with special needs, work together on projects.

Projects begin with teachers observing and questioning children about the topic of interest. Based on children's responses, teachers introduce materials, questions, and opportunities that provoke children to further explore the topic. While some of these teacher provocations are anticipated, projects often move in unanticipated directions as a result of problems children identify. Thus, curriculum planning and implementation revolve around open-ended and often long-term projects that are based on the reciprocal nature of teacher-directed and child-initiated activity.

The Hundred Languages of Children

As children proceed in an investigation, generating and testing their hypotheses, they are encouraged to depict their understanding through one of many symbolic languages, including drawing, sculpture, dramatic play, and writing. They work together towards the resolution of problems that arise. Teachers facilitate and then observe debates regarding the extent to which a child's drawing or other form of representation lives up to the expressed intent. Revision of drawings (and ideas) is encouraged, and teachers allow children to repeat activities and modify each other's work in the collective aim of better understanding the topic. Teachers foster children's involvement in the processes of exploration and evaluation, acknowledging the importance of their evolving products as vehicles for exchange.

Conclusion

Reggio Emilia's approach to early education reflects a theoretical kinship with Dewey, Piaget, Vygotsky, and Bruner, among others. Much of what occurs in the class reflects a constructivist approach to early education. Yet, Reggio Emilia's approach challenges some American conceptions of teacher competence and developmentally appropriate practice. For example, teachers in Reggio Emilia assert the importance of being confused as a contributor to learning; thus a major teaching strategy is to purposefully allow for mistakes to happen, or to begin a project with no clear sense of where it might end. Another characteristic that is counter to the beliefs of many American educators is the importance of the child's ability to negotiate in the peer group, which renders teacher intervention in children's conflicts minimal. One of the most challenging aspects of the Reggio Emilia approach is the solicitation of multiple points of view regarding children's needs, interests, and abilities, and the concurrent faith in parents, teachers, and children to contribute in meaningful ways to the determination of school experiences. Teachers trust themselves to respond appropriately to children's ideas and interests, they trust children to be interested in things worth knowing about, and they trust parents to be informed and productive members of a cooperative educational team. The result is an atmosphere of community and collaboration that is developmentally appropriate for adults and children alike.

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ERIC DIGEST
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Resource Rooms for Children: An Innovative Curricular Tool

Sonja de Groot Kim

How many opportunities do children in early childhood programs have to become actively engaged in creating their own curriculum experiences, selecting their own materials, and finding new uses for objects? Most early childhood teachers are taught to carefully prepare the classroom environment and plan activities for the children in their care. The tables are set up and the right materials are ready when the children arrive in the morning.

The work of Vygotsky and others has shown that children's ability to construct knowledge is facilitated in an environment where learning is based in a social context. Terminology (raft, mast) and concepts (weight, size) are more easily acquired and better remembered in a curriculum that builds on children's interests (Genishi, 1988). Children collaborate to pursue shared goals that are intrinsically motivating and provide results to their action that are immediately visible (Tudge & Caruso, 1988). In one project at the nursery school at Vassar College in Poughkeepsie, New York, children constructed an ambulance out of a box. This creation stimulated high interest among the children, which led to increasingly elaborate construction plans and more complex play behavior.

Children's learning is also facilitated when they are able to use a wide variety of materials in a wide range of activities and in cooperation with adults who help them ask good questions (Duckworth, 1987). These expanded possibilities for children's learning can be fostered by adding a resource room to a preschool classroom. Based on the staff's experiences with the resource room at the Vassar nursery school, this digest offers suggestions concerning resource rooms in early childhood classrooms, and discusses some issues relevant to children's play.

Set-Up of the Resource Room

Many classroom areas can be converted into a resource space. For example, at the Vassar nursery school, a large walk-in closet was transformed into a resource room by installing pine shelving. In such a space, shelves can be placed every 18 inches or so and used for storing small props and materials or for holding boxes and baskets. Bulky items can be stored in large containers on the floor beneath the bottom shelf. Cheap and effective storage containers include wooden fruit boxes, large cardboard boxes from grocery stores, and laundry baskets. Labels should be attached to such boxes or baskets, describing their contents. Matching the objects that are placed in the boxes with the labels on the boxes helps the children learn to categorize and sort.

Once a resource room has been set up, it becomes an extension of the preschool classroom. At the Vassar nursery school, for example, 3-year-olds use the resource room to find materials for exploratory play. When 4- and 5-year-olds come to the resource room, they often have an idea of what they're looking for, perhaps an object to use as a mast on a ship or wings on an airplane. Sometimes, items in the resource room spark the imagination. One child, for example, found a pie plate and exclaimed, "Look! This could be the mirror for our ambulance."

Items for the Resource Room

For a resource room to function effectively, a real collaboration among the school, families, and the community is necessary. Also, a few parents or teachers are needed to maintain and organize the room's contents, and to request new supplies when they are needed. Recyclable items can provide many of the props and materials to be used in the classroom. Items discarded by stores and businesses can sometimes be used. Parents might bring in other materials such as yarn, buttons, plastic containers, paper towel rolls, shells, pine cones, rocks, and feathers. Favorite items of children are boxes, which become many things in children's symbolic transformations.

Often, items that children use at home can find their way into the classroom resource room. An old tricycle or toy can be disassembled, and the pieces placed in the storage room, where a new use awaits them. For example, the handlebars from a tricycle might become the steering wheel for a school bus in one project, and a peanut butter jar become a gas tank for an ambulance in another.

The Teacher's Role

The teacher's role in an environment where children collaborate in creating the curriculum evolves from a "dispenser of knowledge" to a facilitator and co-learner. Teachers closely observe children and their actions, listen to their conversations, and talk to the parents. All this information then serves to set the stage for collaboration between children and teachers in developing curriculum and in shaping the environment. The types of questions teachers ask children reflect this interactive approach.

"What do you need in order to make a boat?" for example, leads children to other thoughts and further actions. The children might examine books on boats to see what kind of boat they want to make. After deciding, they go to the resource room, find materials to construct their boat, and figure out how to attach all the needed parts.

In dramatic play, children soon become the players. They assign roles, create scripts, and act out their stories. In the course of their play, the function of a boat might change from a passenger boat to a pirate ship. The teacher's role here includes supporting and enriching this type of dramatic play. When children are actively engaged, their social, language, and cognitive competence is enhanced. They also become more task oriented and persistent.

The Role of Error in Children's Play

An account of the preschool programs of Reggio Emilia, Italy (Edwards et al., 1993), describes the role of error in children's play. As children discuss, argue, construct, and reflect, they make accommodations with their previous perceptions, and their knowledge is accordingly enhanced.

Teachers and caregivers have a tendency to prevent children from making errors, or to point out errors to them while giving explanations: "Scissors won't cut this type of cardboard"; "Those nails won't work on this kind of wood." This tendency is natural, but it is more important for children to find out for themselves and correct their own errors. One day in the Vassar nursery school, a group of children constructed little boats with items from the resource room. They had glued wood pieces together and decorated them. They planned to let the glue dry and put the boats in water the following day. The teacher knew what would happen but said nothing.

The next day, when they put their boats in water, the children watched in astonishment as the boats slowly disintegrated. "What happened?" the teacher asked. "I guess glue doesn't work in water," one child answered. "Let's try something else," another child said. For a second time they constructed boats, using different materials: nails, tape, and wire. Of course, this time the boats floated without falling apart. This problem-solving approach, using resource room materials, stimulated children's use of thinking skills.

Symbolic Representation in Children's Play

The ability to pretend that one thing stands for another plays a critical role in the child's development and in later achievement. "Pretending" is essential in learning to read and do math, and in learning other academic subjects later in elementary school. Play is the main activity during which the child develops this pretend ability. Taking on a role (captain of a boat), pretending that an object stands for something else (paper towel rolls for binoculars), developing a pretend situation (we're on the ocean in a storm), interacting verbally with others, and being persistent (playing the same theme for at least ten minutes), are all indicators of good sociodramatic play, and are directly linked to later social and academic competence (Smilansky & Shefatya, 1990).

Conclusion

The resource room in the Vassar nursery school is the children's favorite place to go with their teacher. Making use of the resource room has developed in them a real feeling of competence. They know that their thoughts and ideas are valued by adults and other children. They are not discouraged when something doesn't work, but instead have learned to say, "Well, that didn't work, what else can we try?" The confidence in their own abilities and the skills gained in working collaboratively with others will stand them in good stead as they grow and develop.

This digest was adapted from: Kim, Sonja de Groot. (1993). From Prop Box to Resource Room. *NYSAEYC Reporter* 39(3, Spr/Sum): 1-5.

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The Project Approach:

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Document Type: COLLECTION (020)
Geographic Source: Indonesia
A selection of papers presented at an international conference on the role of language in economic and social development includes: "Changing Paradigms: The Project Approach" (John McGovern); "Team Development of ELT Projects: A Case Study" (William M. Martin, Lynn P. Balabanis); "The Roles of Insiders and Outsiders in Evaluating English Language Programmes and Projects" (Cyril J. Weir); "Problematising Stakeholders: Who Are the Holders and What Are the Stakes?" (Hywel Coleman); "Power and Sustainability in Language-Related Development Projects" (Harvey Smith; "Counterpart Training and Sustainability: Effecting an Exchange of Skills" (Andrea Flew); "Managing Self-Access in Development: Three Perspectives" (Margaretha Kafudji, Patrice North, Denise Finney); "Ensuring Sustainability of Language Centres After Development Projects" (Nangsari Ahmad, Patrick L. Adlam); "A Modular Training Framework: An Appropriate Response to the Issues of Relevance and Home Environment Application in a Teacher Education Project?" (David Lochmohr Prescott); "Dialogue Journals and Negotiating Innovations: Appropriate Technology Reconsidered" (Jonathan Shaw); "'They've Got a Problem with English': Perceptions of the Difficulties of International Postgraduate Students" (Marian May, Annie Bartlett); "How Critical Is Critical Thinking? A Generic Issue for Language in Development" (Brigid Ballard); "Empowering Women Language Teachers in Cambodia" (Kath Copley); "Politics in the Classroom: Teacher-Training in Cambodia" (Psyche Kennett); "Reaching the Critical Mass: Planning Voter Education in South Africa" (Sarah Slabbert); and "The Politics of Development: The Languages of Industrialization" (Chaiskran Hiranpruk). Most papers contain references. (MSE)
Descriptors: Appropriate Technology; Citizenship Education; Classroom Techniques; Critical Thinking; *Developing Nations; Dialog Journals; *Economic Development; English

(Second Language); Foreign Countries; Foreign Students; Graduate Students; Higher Education; Instructional Innovation; *Intercultural Communication; *Language Role; Language Teachers; *Politics of Education; Program Development; Program Implementation; Second Language Instruction; *Second Language Programs; Student Attitudes; Teacher Education; Womens Education

Identifiers: Cambodia; South Africa

ED389684 SP036328

Integrated Approaches to Learning.

Rosberg, Merilee

[1995]

15p.

EDRS Price - MF01/PC01 Plus Postage.

Document Type: REVIEW LITERATURE (070); NON-CLASSROOM MATERIAL (055)

Geographic Source: U.S.; Iowa

Target Audience: Teachers; Practitioners

This paper discusses ways that teachers have found to integrate curriculum and make it more meaningful to students. A review of the literature reveals that teachers are exploring ways to provide developmentally appropriate curriculum and opportunities for children to learn in a more natural setting. Three approaches are examined: whole language, literature-based curriculum, and the project approach. The whole language approach draws on scientific theory based on research in linguistics, education, and psycholinguistics as curriculum is planned and implemented. This approach emphasizes that literacy develops in response to personal and social needs and that children learn language skills in a social context rather than in isolation. Literature-based curriculum is a thematic approach using materials that are meaningful and relevant to the student. The advantages of using literature as the basis of an integrated curriculum are explored, along with methods of student evaluation. Finally, project approach, a method of integrating subjects and involving students in doing in-depth investigation of topics that interest them, is described in detail. Several specific examples are used to illustrate the project approach. allows The three approaches all are seen as enabling teachers to look at how children learn and illustrate that an integrated approach can be an effective and efficient way to teach that is meaningful, relevant, and interesting for teachers and students. (Contains 14 references.) (ND)

Descriptors: Cognitive Development; Cognitive Style; Elementary Education; Elementary School Teachers; Experiential Learning; *Integrated Curriculum; *Interdisciplinary Approach; Language Skills; *Learning Strategies; Literature; Student Motivation; Student Projects; Teacher Effectiveness; Teaching Methods; Teaching Styles; Thinking Skills; *Whole Language Approach

ED389167 FL023348

Changing Paradigms. The Project Approach.

McGovern, John

Apr 1995

12p.; Paper presented at the International Conference on Language in Development (2nd,

Bali, Indonesia, April 10-12, 1995).

EDRS Price - MF01/PC01 Plus Postage.

Document Type: CONFERENCE PAPER (150); POSITION PAPER (120)

Geographic Source: United Kingdom; England

During the last 40 years, there has been a great number of innovations in English Language Teaching (ELT). The method by which these innovations have been diffused in many parts of the world has been through the project approach. This paper explores the suitability and effectiveness of this approach as a model for the diffusion of ELT innovation, using Havelock's three models of innovation, Fullan's process approach, and Henrichsen's link model. It proposes a change of emphasis within project design, implementation, and evaluation to empower the insider, and suggests ways in which this might be achieved. The creation of insider-generated project documents should help to establish a databank for research and development into the diffusion of ELT innovation, which would hopefully lead to new innovation. A historical review of ELT since the 1950s is included. (Contains 14 references.) (Author/NAV)

Descriptors: *English (Second Language); Foreign Countries; *Instructional Effectiveness; *Instructional Innovation; Language Teachers; Models; Program Development; *Second Language Instruction; Teacher Education

ED388988 CS215128

Assessment of an Intervention Addressing Literacy and Ethics.

Suriani, Melanie M.; Wasson, Rebecca

Nov 1994

11p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Nashville, TN, November 9-11, 1994).

EDRS Price - MF01/PC01 Plus Postage.

Document Type: POSITION PAPER (120); CONFERENCE PAPER (150); RESEARCH REPORT (143)

Geographic Source: U.S.; Tennessee

The "Voices of Love and Freedom" project uses current children's literature to help children connect with their teachers and classmates in a personal way while teaching children ethical decision making skills, multicultural understanding, and literacy. The model also provides teachers with an easily understandable method for integrating subjects using real books about real issues. The teacher shares a personal story with the students and then reads an applicable story to them. A collaborative group of researchers from Memphis (Tennessee) City Schools, the Center for Research in Educational Policy, and the University of Memphis's College of Education evaluated the first year's implementation of the project at Oakhaven Elementary School in Memphis. While it is still too early to reach conclusive results, preliminary indications are that the project approach has the potential to significantly reduce the amount of violence and friction in schools. For instance, the number of students disciplined for fighting dropped dramatically. In addition, "Voices for Love and Freedom" has been a catalyst within the school to focus faculty, staff and students on thinking about and expanding alternative choices to violent behavior. Some of the findings have also affected the way the school's principal thinks about student achievement. A detailed

description of how this project got underway at Oakhaven shows that it is a complex undertaking and one that takes more than one school year to implement. (Author/TB)

Descriptors: *Childrens Literature; College School Cooperation; Decision Making; Elementary Education; *Ethics; High Risk Students; *Intervention; Language Arts; Literacy; Models; Moral Values; *Multicultural Education; *Student Attitudes; Violence

Identifiers: Memphis City Schools TN; Trade Books; University of Memphis TN

ED385730 CE069637

Teaching through Projects. Open and Distance Learning Series.

Henry, Jane

1994

160p.

ISBN: 0-7494-0846-4

Available From: Kogan Page Ltd., 120 Pentonville Road, London N1 9JN, England, United Kingdom.

Document Not Available from EDRS.

Document Type: BOOK (010)

Geographic Source: United Kingdom; England

Target Audience: Teachers; Practitioners

This book shows how project work can be used in open and flexible learning. It is divided into three sections. Section A provides background on the use of project work in education and training. Chapter 1 introduces the features that characterize project work and related activities. Chapter 2 examines the varieties of project work and provides examples of projects from various disciplines, including open and distance learning. Chapter 3 offers a brief history of the project approach to teaching and describes some reasons for teaching through projects as well as their drawbacks. Section B describes the process of undertaking a project through an examination of the difficulties typically encountered at each stage of project work. Chapter 4 elaborates on the problems associated with topic selection; chapter 5 addresses the pitfalls that can occur during data collection; and chapter 6 examines the difficulties facing the student during data analysis and report writing. Chapter 7 outlines the key training and scheduling aspects of project work. Each chapter suggests ways of facilitating students' studies. Section C offers guidelines. Chapter 8 discusses project design, material, audiovisual, and computer-based support. Chapter 9 compares several different approaches to assessing projects and discusses grading issues. Chapter 10 examines the tutor's role and outlines ways of maximizing this expensive resource. Chapter 11 discusses very positive outcomes often associated with the use of project work and the question of dropout. Appendixes contain 112 references and an index. (YLB)

Descriptors: Adult Education; *Distance Education; Experiential Learning; Foreign Countries; Guidelines; Guides; *Open Education; Student Evaluation; *Student Projects; Teacher Responsibility; *Teaching Methods

Identifiers: United Kingdom

ED382402 PS023311

An Integrated Curriculum for Kindergarten/First Grade Children Utilizing Project Approach.

Hsu, Yuehkuei

[1995]

13p.

EDRS Price - MF01/PC01 Plus Postage.

Document Type: TEACHING GUIDE (052)

Geographic Source: U.S.; Tennessee

An integrated curriculum allows children's learning in all traditional subject areas to occur primarily through projects that the teachers plan and that reflect children's interests. This paper presents a curriculum web on Chinese festivals, specifically, the Chinese New Year, for kindergarten and first grade levels. The paper first presents a teacher brainstorm of a curriculum web on celebrating Chinese festivals, and then presents the thematic web for the subtopic Chinese New Year, which includes the origin of the festival, things people do, special activities, foods people eat, clothing, greetings, and the animal of the year from the Chinese zodiac. Next, the paper lists the curriculum subject areas and learning activities for the New Year subtopic: reading-listening-speaking; writing; math; science; art; social studies; music; and movement. Key events for the unit are then listed, including book making, field trips, dragon making, dragon parade, display center, and party. A student evaluation checklist for each of the subject areas is included. Two appendices contain a story map and a description of the origins of the Chinese New Year and its customs. (HTH)

Descriptors: *Chinese Culture; Classroom Techniques; Foreign Countries; *Integrated Curriculum; Learning Activities; Primary Education; Teaching Methods; *Thematic Approach

Identifiers: China; *Chinese New Year; Festivals; Taiwan; *Webbing (Thematic)

ED381264 PS023164

Early Childhood Education and Beyond: Can We Adapt the Practices and Philosophies from the Preschools of Reggio Emilia, Italy into Our Elementary Schools in America?

Firlik, Russ

Mar 1995

14p.

EDRS Price - MF01/PC01 Plus Postage.

Document Type: POSITION PAPER (120)

Geographic Source: U.S.; New York

The model presented by the preschools in Reggio Emilia, Italy, is one of cooperation and collaborations among teachers, parents, and children; curriculum based on the "project approach," and constructivist learning philosophy, which states that children construct their knowledge and values as a result of interactions with and action on the physical and social world. American early childhood educators and researchers have expressed notable interest in the Reggio Emilia programs; however differences in the American and European thinking attitudes within a macro society, and cultural conventions make adapting or transporting

methods with European roots difficult at best. An example of differences in thinking would be the way Americans have discarded European traditions of evaluating ideas and systems of thought according to "intellectual consistency" or aesthetic appeal. Cultural differences include: individualism versus collectivism; the American emphasis on "equalitarianism"; forms of activity of doing rather than being; the separation of work and play; and the dichotomy between competition and affiliation. Several elements need to be in place in American schools before any successful transitions from preschool to elementary school can take place, including preparation of children for such transitions, involvement of parents in each step of the process, and continuity of program through developmentally diverse and age/individual appropriate curricula. Although the Reggio Emilia schools do not have administrators or head teachers, their programs support the administrator's practical role in promoting development. Administrators must promote teachers and children to be curriculum makers; invite parents to be part of the classroom; allow time for observing the project process; allow planning time for teachers; and encourage and support practitioners by giving them time to develop. Contains nine references. (HTH)

Descriptors: Administrator Role; Comparative Analysis; Constructivism (Learning); *Cultural Differences; Educational Attitudes; Elementary Education; Parent Participation; Preschool Education; School Readiness; *Teaching Methods

Identifiers: Developmentally Appropriate Programs; Project Approach (Katz and Chard); *Reggio Emilia Approach

ED376010 RC019853

The Concepts of Quality for Rural and Small School Decision Makers.

Wilson, Alfred P.; Hedlund, Paul H.

Oct 1994

30p.; Paper presented at the Annual Meeting of the Rural and Small Schools Conference (16th, Manhattan, KS, October 24-25, 1994).

EDRS Price - MF01/PC02 Plus Postage.

Document Type: REVIEW LITERATURE (070); CONFERENCE PAPER (150)

Geographic Source: U.S.; Kansas

Target Audience: Administrators; Practitioners

This report briefly introduces the ideas of six influential individuals in the field of quality control, and relates these concepts to current educational innovations. Quality is defined by Philip B. Crosby as the result of a culture of relationships within an organization. W. Edwards Deming espouses intrinsic motivation for all employees, consistency of purpose, and consistent quality improvement. Armand V. Feigenbaum proposes integrating quality development, maintenance, and improvement efforts of groups within an organization. Kaoru Ishikawa emphasizes full participatory management. Joseph M. Juran stresses the "project approach" wherein solution schedules are developed as problems are identified. Taiichi Ohno's contribution is to eliminate waste in the deployment of people by developing teams and team leaders. The point is made that systems do not operate in isolation from their host communities. Dr. Deming's PDSA (Plan Do Study Act) cycle is used as an example of a quality process. Seven basic quality control tools and seven management and planning tools are described that help people organize and analyze facts, opinions, and political realities as

part of the decision-making process. Total Quality Management is used to examine recent educational initiatives: site-based decision making, effective schools, strategic planning, outcome-based education, and contract schools. The 1993 work "Toward Quality in Education the Leaders' Odyssey," developed by the National LEADership Network study group on restructuring schools, places Deming's 14 points under 8 headings and compares varied educational innovations and initiatives in that context. The total systems approach is urged as the tie used to interface innovations and initiatives that schools and school districts adopt. This paper contains 89 references. (RAH)

Descriptors: Administrative Principles; *Educational Administration; Educational Improvement; Educational Innovation; *Educational Planning; *Educational Quality; Elementary Secondary Education; Participative Decision Making; Quality Circles; *Quality Control; Rural Schools; *Systems Approach; Teamwork; *Total Quality Management

Identifiers: Deming (W Edwards)

ED375986 PS022934

Reflections on the Reggio Emilia Approach. Perspectives from ERIC/EECE: A Monograph Series No. 6.

Katz, Lilian G., Ed.; Cesarone, Bernard, Ed.

ERIC Clearinghouse on Elementary and Early Childhood Education, Urbana, Ill.

Dec 1994

135p.

Sponsoring Agency: Office of Educational Research and Improvement (ED), Washington, DC.

Contract No: RR93002007

Available From: ERIC Clearinghouse on Elementary and Early Childhood Education, 805 West Pennsylvania Avenue, Urbana, IL 61801-4897 (Catalog No. 215, $10, plus $1.50 shipping and handling; please prepay orders).

EDRS Price - MF01/PC06 Plus Postage.

Document Type: BOOK (010); PROJECT DESCRIPTION (141); ERIC PRODUCT (071)

Geographic Source: U.S.; Illinois

This monograph consists of seven papers that discuss issues related to the teaching approach used in the preschools of Reggio Emilia, Italy. The papers are: (1) "Images from the World: Study Seminar on the Experience of the Municipal Infant-Toddler Centers and the Preprimary Schools of Reggio Emilia, Italy" (Lilian G. Katz), which identifies problems that warrant consideration by American educators trying to adapt the Reggio Emilia approach to schools in the United States; (2) "Images from the United States: Using Ideas from the Reggio Emilia Experience with American Educators" (Brenda Fyfe), which shares insights of teachers in the St. Louis, Missouri, area as they implement the Reggio Emilia approach in their classrooms; (3) "Reggio Emilia: Its Visions and Its Challenges for Educators in the United States" (Rebecca New), which notes the similarities and differences in the way teachers in Italy and the United States perform their daily work; (4) "Different Media, Different Languages" (George Forman), which explains the role of graphic "languages" in children's learning; (5) "Staff Development in Reggio Emilia" (Carlina Rinaldi), which explains the Reggio Emilia schools' unique approach to staff development; (6) "An Integrated

Art Approach in a Preschool" (Giordana Rabitti), which details a case study of a children's project conducted in one of the preprimary schools in Reggio Emilia; and (7) "Promoting Collaborative Learning in the Early Childhood Classroom: Teachers' Contrasting Conceptualizations in Two Communities" (Carolyn Edwards, Lella Gandini, and John Nimmo), which examines the beliefs of teachers in Italy and the United States about their roles and about the nature of children as learners. A reference list is appended to some of the papers. The monograph also contains a bibliography of 22 items on the Reggio Emilia approach selected from the ERIC database, and a list of additional resources on the Reggio Emilia approach. (BC)

Descriptors: Annotated Bibliographies; *Art Activities; *Cultural Differences; Foreign Countries; Freehand Drawing; Infants; Preschool Children; *Preschool Education; Preschool Teachers; *Program Implementation; Staff Development; Teacher Attitudes; *Teaching Methods; Toddlers

Identifiers: Collaborative Learning; Italy; Program Adaptation; *Project Approach (Katz and Chard); *Reggio Emilia Approach; United States

ED368459 PS022103

Historical Roots of the Project Approach in the United States: 1850-1930.

DuCharme, Catherine C.

12 Nov 1993

38p.; Paper presented at the Annual Convention of the National Association for the Education of Young Children (Anaheim, CA, November 10-13, 1993).

EDRS Price - MF01/PC02 Plus Postage.

Document Type: PROJECT DESCRIPTION (141)

Geographic Source: U.S.; California

This paper contends that the historical roots of the project approach in the United States can give strength to early childhood educators today, offering insight and models for the implementation of child-oriented curriculum. The project approach to teaching and learning evolved as a result of the educational ideas of Friedrich Froebel, William James, G. Stanley Hall, Francis Wayland Parker, John Dewey, and William Heard Kilpatrick in the 19th- and early 20th-century. Froebel maintained that the purpose of school is to enable children to become cooperative and helpful in living, that the root of the educative process lies within the child's instincts and spontaneous activities rather than in the presentation of external material, and that the school is a mini-community reflecting the larger, maturer society. The ideas of Froebel, James, Hall, Parker, Dewey, Kilpatrick and others are discussed in detail, especially in their relation to the kindergarten movement, the nature study movement, the Herbartian movement, and the laboratory schools movement in the 19th- and early 20th-century. Contains 58 references. (MDM)

Descriptors: Classroom Techniques; *Curriculum Development; *Early Childhood Education; *Educational History; *Educational Philosophy; Kindergarten; Laboratory Schools; Social History; *Student Projects; *Teaching Methods; Teaching Models; United States History

Identifiers: Dewey (John); Froebel (Friedrich); Hall (G Stanley); James (William); Parker (Francis)

ED367606 SP035023

Learning through Assessment: A Project Approach.

Hastings, Jan; And Others

18 Feb 1994

20p.; Paper presented at the Annual Meeting of the American Association of Colleges for Teacher Education (Chicago, IL, February 16-19, 1994).

EDRS Price - MF01/PC01 Plus postage.

Document Type: CONFERENCE PAPER (150); PROJECT DESCRIPTION (141)

Geographic Source: U.S.; Maine

This paper describes the teacher certification program offered at the Fryeburg site of the University of Southern Maine's Extended Teacher Education Program and how the spirit of inquiry that is fostered through a project approach affects the interns and the practicing teachers with whom they work. The program uses a project approach to organize the interns' experiences and offer a coordinated approach to the curriculum which helps interns to unify experiences more completely. The projects are assigned and assessed through a general methods class. The projects assigned are: a teaching platform; a comparative child study; collaboration with other interns on a thematic integrated unit; the artifact collection (videotapes of three planned lessons which are analyzed, and an action research report); a response journal; and a portfolio. Through these projects, the program models that: teachers are guided by students' progress; learning demonstrated through a project, not a paper and pencil test, may be longer lasting; student-selected work reveals things that required work does not; the product is important, and so is the process required to produce the product; and opportunities for students to unify their learning through a variety of modes is an effective strategy. Program materials are appended to the paper. (JDD)

Descriptors: Beginning Teachers; Elementary Secondary Education; *Extended Teacher Education Programs; Higher Education; *Integrated Curriculum; Interdisciplinary Approach; *Internship Programs; Practicums; *Preservice Teacher Education; Program Implementation; Student Evaluation; *Student Projects; Student Teachers; Student Teaching; Teacher Certification; *Teacher Education Curriculum; Teacher Education Programs

Identifiers: University of Southern Maine

ED358921 PS021374

Early Childhood Curriculum Resource Handbook. A Practical Guide for Teaching Early Childhood (Pre-K-3).

Hendrick, Joanne, Ed.; And Others

1993

420p.; Part of a series of teacher resource handbooks.

ISBN: 0-527-20809-4

Available From: Kraus International Publications, 358 Saw Mill River Road, Millwood, NY 10546-1035 ($19.95).

Document Not Available from EDRS.

Document Type: NON-CLASSROOM MATERIAL (055)

Geographic Source: U.S.; New York

Target Audience: Teachers; Administrators; Practitioners

This guide provides curriculum developers, education faculty, veteran teachers, and student teachers with basic information on the background of early childhood curriculum, as well as current information on publications, standards, and special materials for early childhood classrooms. Following an introduction, the material is presented in 14 chapters by different contributors. Chapter 1 discusses the history and development of present-day curriculum and the directions it is taking. Chapter 2 is a practical guide to creating or revising an early childhood curriculum. Funding sources for curriculum projects are listed in chapter 3, and chapter 4 outlines the content of integrated early childhood education. Chapter 5 describes state guidelines for early childhood education, and chapter 6 lists department of education addresses and publication titles for each state. Classroom assessment is the focus of chapter 7, and chapter 8 consists of annotated lists of curriculum guides for prekindergarten through grade three. Chapter 9 discusses the project approach in early childhood curriculum. Chapter 10 covers trade books, and chapter 11 lists sources of textbooks, software, videos, and other curriculum materials. Chapter 12 lists textbooks and materials adopted by New Mexico and West Virginia, two states with policies specific to the adoption of textbooks in early childhood education. Chapter 13 provides an index to reviews of early childhood textbooks and supplementary materials. Chapter 14 lists subscribers of the Kraus Development Library, a source of curriculum guides in early childhood education. A reference list is provided with some of the chapters. The appendix reprints sections of two exemplary curriculum guides. (TJQ)

Descriptors: *Curriculum Development; *Curriculum Guides; *Early Childhood Education; Financial Support; *Instructional Development; *Instructional Materials; Integrated Curriculum; Media Selection; Reading Material Selection; *Resource Materials; State Curriculum Guides; State Departments of Education; Student Evaluation; Textbook Selection

Identifiers: Project Approach (Katz and Chard); State Level Textbook Adoption

ED355034 PS021222

The Hundred Languages of Children: The Reggio Emilia Approach to Early Childhood Education.

Edwards, Carolyn, Ed.; And Others

1993

324p.

ISBN: 0-89391-933-0

Available From: Ablex Publishing Corporation, 355 Chestnut Street, Norwood, NJ 07648 (hardcopy: ISBN-0-89391-927-6, $54.95; paperback: ISBN-0-89391-933-0, $24.95).

Document Not Available from EDRS.

Document Type: COLLECTION (020); PROJECT DESCRIPTION (141)

Geographic Source: U.S.; New Jersey

This collection of 18 essays and interviews documents the unique approach to early childhood education taken by schools in the Reggio Emilia region of Northern Italy for the last 30 years. The book is divided into four major parts. Part I includes an introduction by Carolyn Edwards and others, and the essay, "What Can We Learn From Reggio Emilia?" by Lillian G. Katz. Part II consists of five interviews conducted by Lella Gandini with Reggio

Emilia educators: "History, Ideas, and Basic Philosophy," with Loris Malaguzzi; "The Community-Teacher Partnership in the Governance of the Schools," with Sergio Spaggiari; "The Emergent Curriculum and Social Constructivism," with Carlina Rinaldi; "The Role of the Pedagogista," with Tiziana Filippini; and "The Role of the Atelierista," with Vea Vecchi. Part III examines the theory and practice of the Reggio Emilia approach through four essays: "Educational and Caring Spaces," by Lella Gandini; "Partner, Nurturer, and Guide: The Roles of the Reggio Teacher in Action," by Carolyn Edwards; "Multiple Symbolization in the Long Jump Project," by George Forman; and "Curriculum Development in Reggio Emilia: A Long-Term Curriculum Project About Dinosaurs," by Baji Rankin. Part IV examines the extension of the Reggio Emilia approach to American classrooms in six essays: "Cultural Variations on Developmentally Appropriate Practice: Challenges to Theory and Practice," by Rebecca New; "The City in the Snow: Applying the Multisymbolic Approach in Massachusetts," by George Forman and others; "Connections: Using the Project Approach with 2- and 3-Year-Olds in a University Laboratory School," by Debbie LeeKeenan and John Nimmo; "Another Way of Seeing Things: We're Still Learning," by Baji Rankin and others; "A Backward Look: From Reggio Emilia to Progressive Education," by Meg Barden; and "Poppies and the Dance of World Making," by Paul Kaufman. A closing essay, "Conclusion: Where Do We Go From Here?" by Carolyn Edwards and George Forman; a glossary of terms used by Reggio Emilia educators; and a list of published resources about the Reggio Emilia approach conclude the volume. (MDM)

Descriptors: *Art Education; Community Role; Creative Development; *Curriculum Development; Educational Innovation; *Educational Methods; *Educational Theories; Foreign Countries; Preschool Education; Progressive Education; Student Projects; Teacher Role; *Young Children

Identifiers: *Italy (Reggio Emilia); *Massachusetts (Amherst); United States

ED343667 PS020349

Cooperative Learning: Theory to Practice in the Young Child's Classroom.

McLean, Deborah L.

Jan 1992

11p.

EDRS Price - MF01/PC01 Plus Postage.

Document Type: RESEARCH REPORT (143)

Geographic Source: U.S.; Tennessee

This paper discusses cooperative learning as a teaching method that uses intrinsic rewards, or rewards that come from within a student, in the education of young children. The developmental perspective of cooperative learning, which suggests that peer interaction, without the use of extrinsic rewards, leads to intellectual and social growth, is based on the theories of Vygotsky and Piaget. This perspective is supported by a growing body of evidence indicating that extrinsic rewards are detrimental to creative functioning. To foster cooperative learning, teachers can: (1) present children with developmentally appropriate activities; (2) encourage social interaction; (3) have children work with peers of mixed abilities; (4) develop activities which provide children with hands-on experience; (5) involve children in the learning process; and (6) provide interesting and open-ended activities.

Teachers can follow these seven guidelines by using a project approach to learning in the classroom. The project approach capitalizes on children's differing abilities, revolves around a theme, and allows for an open-ended learning process. The benefits of cooperative learning include stressing cooperation over competition, developing social skills, and providing opportunities for the handicapped child to make a contribution to the group. A list of 14 references is provided. (BC)

Descriptors: *Cooperative Learning; Elementary Education; *Group Activities; Interpersonal Competence; Learning Activities; Mainstreaming; *Peer Relationship; Preschool Education; Rewards; *Self Reward; *Social Development; *Student Motivation; Teaching Methods

Identifiers: Developmentally Appropriate Programs; *Developmental Theory; Piaget (Jean); Vygotsky (Lev S)

ED340518 PS020272

The Project Approach.

Katz, Lilian G.; Chard, Sylvia D.

Feb 1992

27p.

EDRS Price - MF01/PC02 Plus Postage.

Document Type: TEACHING GUIDE (052); EVALUATIVE REPORT (142)

Geographic Source: U.S.; Illinois

This document proposes the project approach as one element of early childhood education that can function in a complementary relationship to other aspects of the early childhood curriculum. The term "project" is defined as an extended investigation of a topic that is of interest to participating children and judged worthy of attention by their teachers. Projects involve the application of a variety of intellectual, academic, and social skills and competencies. The project approach builds self-confidence, encourages creativity and other dispositions, and offers opportunities for children and parents to work closely together in support of the school program. The theoretical rationale for the project approach is based both on a specific view of the main goals of education and on a developmental approach to implementing those goals. The goals are: (1) the construction and acquisition of worthwhile knowledge; (2) the development of a wide variety of basic intellectual and social skills; (3) the strengthening of desirable dispositions; and (4) the engendering of positive feelings in children about themselves as learners and as participants in group endeavors. Each of these goals is defined, and the principles of practice they imply are then discussed in terms of what is understood about young children's development and learning. Guidelines for implementing project work are provided and a model of a specific project is presented. (SH)

Descriptors: *Curriculum Design; Early Childhood Education; *Educational Principles; *Educational Theories; Experiential Learning; Instructional Innovation; Integrated Curriculum; Learning Activities; Skill Development; *Student Projects; Teacher Role; *Teaching Methods; *Thematic Approach

Identifiers: *Project Approach (Katz and Chard)

ED338386 PS019963
Impressions of Reggio Emilia.
Borgia, Eileen
15 Aug 1991
35p.
EDRS Price - MF01/PC02 Plus Postage.
Document Type: PROJECT DESCRIPTION (141)
Geographic Source: Illinois

The preschools operated by the municipality of Reggio Emilia in Emilia Romagna, Italy, have drawn the attention of early childhood educators worldwide. This paper describes five features of these preschools. First, the educational philosophy of the schools is influenced by the high value accorded to cooperation in nothern Italian culture; Bruner's concept of learning as a communal activity; and Issacs' concept of learning as active inquiry. Second, teachers are viewed as collaborators in a child's education, rather than as transmitters of knowledge, and there is frequent cooperation between teachers and parents concerning children's education. Third, the design of the preschools has incorporated aesthetically beautiful spaces, including spacious entryways, clean and decorated dining rooms, and well-supplied art areas. Fourth, great value is placed on arts and letters. Children's visual perception and aesthetic awareness are enchanced. Drawing is a daily occurrence. Teachers encourage children's communication through words and noverbal means. Fifth, the preschools use the project approach to learning. Projects incorporate art, science, numbers, and words, and involve disussions, field experience, cultural exposure, and relating to the community at large. A list of 20 references is included. (BC)

Descriptors: Aesthetic Education; Aesthetic Values; *Art Education; Communication Skills; *Cooperative Learning; *Educational Facilities Design; *Educational Philosophy; Experiential Learning; Foreign Countries; Parent Participation; Parent Teacher Cooperation; Preschool Children; *Preschool Education; Preschool Teachers; Student Projects; Teaching Methods

Identifiers: *Italy (Reggio Emilia)

ED338366 PS019919
To Talk or Not To Talk: That Is the Question.
Clyde, Margaret
May 1990
15p.; Paper presented at the Northern Territory Children's Services Conference (Katherine, Northern Territory, Australia, May 10-12, 1990).
EDRS Price - MF01/PC01 Plus Postage.
Document Type: CONFERENCE PAPER (150)
Geographic Source: Australia; Victoria

This paper elaborates on a series of quotations to illustrate major influences in children's language development. The first quotation, from Lilian G. Katz (1988), suggests that what children like is not necessarily developmentally appropriate for them. This idea can be applied to the development of language competence. In the second quotation, Toni G. Cross notes that a loss of language may occur in preschool settings in which the teacher tends

towards a dominant conversational style. Discussion of this quotation addresses studies that suggest that mothers' conversational style is more positive than preschool teachers'. In the third quotation, Margaret Clyde (1990) proposes that learning environments need to be embedded in contexts that are meaningful to children. The fourth quotation, from Katz (1989), stresses the value of three functions of language: communication, expression, and reasoning. In the fifth quotation, also from Katz (1989), it is noted that spontaneous play and project work are closely intertwined and occur side by side. The project approach is discussed. It is maintained that appropriate intervention by teachers and caregivers involves encouragement; direction, when necessary; and modeling. The final quotation, from Amy Sheldon (1990), maintains that "our language reflects sexist, male-centred attitudes that perpetuate the...marginalization...of female experience." A bibliography of 14 items is provided. (BC)

Descriptors: *Child Language; Communication Skills; *English Instruction; Foreign Countries; *Language Acquisition; *Mothers; Parent Child Relationship; Play; *Preschool Children; Preschool Education; *Preschool Teachers; Sexism in Language; Student Projects

Identifiers: Australia; Conversation; Katz (Lilian G); New Zealand; United States

ED328366 PS019478

Primary Guide for Instructional Planning.

Leigh, Cindy; And Others

Mississippi Univ., Jackson. Early Childhood Leadership Inst. 1990

1,464p.

Sponsoring Agency: Mississippi State Dept. of Education, Jackson. Bureau of Instructional Services.

EDRS Price - MF12/PC59 Plus Postage.

Document Type: TEACHING GUIDE (052)

Geographic Source: U.S.; Mississippi

Government: State

Target Audience: Teachers; Practitioners

Mississippi's guide for instructional planning for the primary grades consists of six units and appended materials. Research principles incorporated into the guide include: (1) a project approach that encourages the study of specific topics; (2) an integrated language program based on use of children's literature for informal and formal instruction in language arts; (3) mathematics instruction involving the use of manipulatives, a variety of representational forms, calculators, and a strong emphasis on problem solving; (4) student grouping practices that promote collaborative projects and activities; and (5) the design of learning centers to enhance instruction in basic skills. The six unit themes, and their suggested time-lines, are: Living and Learning Together, August-September; Our Town, October-November; Then and Now, November-December; Investigations, January-February; Fantasy and Fact, March; and The Big Backyard, April-May. Each unit follows the same format, consisting of title, topic web, general goals that guide planning, methods of evaluation, specific unit goals, a project section, and an activity section. Required and recommended books are cited at the end of each unit. Appendices provide teacher resource materials, an informal test, a social skills checklist, a reading interview notesheet, and a subject area checklist and developmental

checklist. (RH)

Descriptors: Check Lists; *Cooperative Learning; *Instructional Development; Instructional Materials; Integrated Curriculum; Learning Activities; Learning Centers (Classroom); Primary Education; State Curriculum Guides; *Student Projects; *Teaching Methods; *Thematic Approach; *Units of Study; Whole Language Approach

Identifiers: *Mississippi

ED324107 PS019064

Why the Project Approach?

Feng, Jianhua

[1989]

9p.

EDRS Price - MF01/PC01 Plus Postage.

Document Type: NON-CLASSROOM MATERIAL (055)

Geographic Source: U.S.; Tennessee

This paper analyzes the rationale for the project approach to educational programming from the cognitive-developmental perspective. It is argued that in many ways, the project approach reflects the cognitive-developmental view; that it is a convergence of Piaget's constructivism and Dewey's progressivism. Like any approach, the project approach is a way of teaching, learning, and thinking about children, learning, and knowledge. The project approach views the child as active, individual, and whole. Children are unique in terms of experience, perceptions, understandings, and interests. This uniqueness should be the school's starting point in fostering continuous growth and development. To understand the physical environment and know the functions of things, children should have hands-on experience in interacting with and manipulating objects. Learning that is focused on both the physical and social environment involves knowledge, skills, disposition, and feelings. It is concluded that what is required in preschool and kindergarten is an intellectually oriented approach in which children interact in small groups as they work together on a variety of projects which help them make sense of their experience. (RH)

Descriptors: *Cognitive Development; Early Childhood Education; *Educational Practices; Guidelines; Individual Development; *Kindergarten; *Preschool Education; Social Development; *Student Projects; *Teaching Methods

ED318565 PS018749

Projects and Provocations: Preschool Curriculum Ideas from Reggio Emilia, Italy.

New, Rebecca S.

1990

19p.

EDRS Price - MF01/PC01 Plus Postage.

Document Type: PROJECT DESCRIPTION (141)

Geographic Source: U.S.; New York

This paper explores implications of the preschool program in Reggio Emilia, Italy for the early childhood education curriculum in the United States. Reggio Emilia's municipal early childhood program incorporates high quality day care with a carefully articulated philosophy

of education. The curriculum of the preschools is based on a project approach to learning that emphasizes symbolic representation. Children and teachers are viewed as partners in learning. Teachers serve as facilitators of a constructivist curriculum: as provocateurs who create discontinuous or discrepant experiences and problems. Teachers also serve as careful observers who document children's growth. Teachers view art as central to the educational process, as a form of exploration and expression. Each preschool has an art teacher who is available to work with the children and their teachers throughout the day. Projects, which provide numerous opportunities for symbolic representation, may last for several days or months. A sequence of responding, recording, playing, exploring, hypothesis building and testing, and provoking occurs in most projects. The projects described in detail concern shadows, self-portraits, war play, enemies, and outer space. (RH)

Descriptors: Art Products; Communication (Thought Transfer); Curriculum Development; Early Childhood Education; *Educational Innovation; Foreign Countries; *Preschool Curriculum; Program Descriptions; Public Schools; *Student Projects; Student Role; *Teacher Role; Teacher Student Relationship; *Teaching Methods

Identifiers: *Italy; *Symbolic Representation

ED237190 PS013771

I Know What I'm Doing, I Just Don't Know What to Call It.

Becher, Rhoda McShane

Apr 1983

23p.; Paper presented at the St. Louis Association for the Education of Young Children Spring Curriculum Workshop (St. Louis, MO, April 9, 1983).

EDRS Price - MF01/PC01 Plus Postage.

Document Type: POSITION PAPER (120); CONFERENCE PAPER (150)

Geographic Source: U.S.; Illinois

Three concepts critically important in developing curricula for young children are play, thinking/creativity, and sustained interest. Through play, children explore the world; practice discovered relationships; and establish meanings for concepts, words, ideas, and actions. Teachers should actively focus on the learning potential of play. Teachers' concepts of children's cognitive and creative development should also be broad enough to include a range of thinking activity levels and at least four basic dimensions of creativity. Specifically with respect to thinking, children are capable of knowledge acquisition/processing, comprehension, application, analysis, synthesis, and evaluation. Ideational fluency, originality, flexibility, and elaborate thinking are dimensions of creativity that teachers can also increase, while they remain sensitive to differences in children's learning styles. A good curriculum is responsive to children's curiosity, develops and furthers their interest commitments, and introduces new areas of interest. These three important aspects of curricula for young children can be integrated in practice through the use of "webbing" and a project approach. Webbing, a process designed to organize children's brainstorming efforts, results in an integrated written record of the knowledge, processes, resources, and learning experiences/products associated with a given topic and provides a detailed basis for project development. (RH)

Descriptors: *Childhood Interests; *Cognitive Processes; Cognitive Style; *Creativity;

*Curriculum Development; Early Childhood Education; Integrated Curriculum; *Play; *Student Projects; Teacher Role; Teaching Methods

ERIC Journal Articles

EJ516731 PS524341
The Project Approach: A Museum Exhibit Created by Kindergartners.
Diffily, Deborah
Young Children, v51 n2 p72-75 Jan 1996
ISSN: 0044-0728
Available From: UMI
Document Type: PROJECT DESCRIPTION (141); JOURNAL ARTICLE (080)
Describes one kindergarten classroom's experience creating a rock and fossils museum exhibit and the excitement and learning that occurred when the children become directly involved in the project. Using the framework of the project approach, math, science, art, writing, and social studies content areas were involved. (ET)
Descriptors: *Class Activities; *Exhibits; *Experiential Learning; Kindergarten; Kindergarten Children; Primary Education; *Student Participation; *Student Projects; Teaching Methods
Identifiers: Dewey (John); Project Approach (Katz and Chard); Rocks

EJ505502 PS523296
Projects in the Early Years.
Hartman, Jeanette A.; Eckerty, Carolyn
Childhood Education, v71 n3 p141-47 Spr 1995
ISSN: 0009-4056
Available From: UMI
Document Type: TEACHING GUIDE (052); JOURNAL ARTICLE (080)
Suggests that the growing interest in project work in early childhood education is in response to the call for developmentally appropriate practices. Defines projects and discusses the beginning of a project. Discusses the three phases of the "construction site/house project" by four- and five-year olds and provides responses to frequently asked questions about projects. (DR)
Descriptors: Class Activities; Definitions; Early Childhood Education; *Outcomes of Education; Preschool Children; *Teaching Methods
Identifiers: Developmentally Appropriate Programs; *Project Approach (Katz and Chard)

EJ503734 PS523431
Project Work with Diverse Students: Adapting Curriculum Based on the Reggio Emilia Approach.
Abramson, Shareen; And Others
Childhood Education, v71 n4 p197-202 Sum 1995
ISSN: 0009-4056

Available From: UMI

Document Type: PROJECT DESCRIPTION (141); JOURNAL ARTICLE (080)

Presents key features of the Reggio Emilia approach and its adaptation to early childhood curriculum in the United States. Discusses using projects as a teaching strategy for diverse students to encourage language and conceptual development. Gives prominence to visual languages. Describes project activities involving student teachers and children. (BAC)

Descriptors: *Curriculum Development; Early Childhood Education; Educational Environment; Educational Innovation; *Instructional Materials; Integrated Curriculum; Language Acquisition; Multicultural Education; *Student Projects; *Teaching Methods; Visual Arts

Identifiers: Culturally Different Students; Italy (Reggio Emilia); *Project Approach (Katz and Chard); *Reggio Emilia Approach

EJ471383 PS520957

What's So New about the Project Approach?

Trepanier-Street, Mary

Childhood Education, v70 n1 p25-28 Fall 1993

ISSN: 0009-4056

Available From: UMI

Document Type: PROJECT DESCRIPTION (141); JOURNAL ARTICLE (080)

The project approach involves an in-depth investigation of a particular topic that integrates language arts, mathematics, social studies, science, and the fine arts and extends over a period of several days or weeks. Discusses new ways to implement this approach in early childhood classrooms. (MDM)

Descriptors: *Children; *Class Activities; Early Childhood Education; Integrated Activities; *Interdisciplinary Approach; *Student Projects; Student Role; *Teaching Methods

EJ467637 RC509415

Students and Learning.

Ruopp, Richard

Journal of Research in Rural Education, v9 n1 p43-46 Spr 1993

Theme issue with title "Telecommunication and Rural Schools: The TERC LabNetwork."

ISSN: 8756-0534

Document Type: REVIEW LITERATURE (070); JOURNAL ARTICLE (080)

Discusses the impact of the telecommunication experience on student skills (thinking, reading, writing, group dynamics, and basic computer literacy) and student motivation and attitudes (educational attitudes, self-concept, and world view). Discusses indirect learning as the heart of the project approach to education. Lists research questions on network use by rural students. (SV)

Descriptors: Elementary Secondary Education; *Incidental Learning; *Information Networks; Learning Activities; Research Needs; Rural Education; Science Education; *Student Attitudes; Student Motivation; *Student Projects; *Telecommunications

Identifiers: *LabNet

EJ450838 SP521495
Putting Research to Work. Multiple Intelligences.
Instructor, v102 n1 p48-49 Jul-Aug 1992
ISSN: 1049-5851
Available From: UMI
Document Type: JOURNAL ARTICLE (080); TEACHING GUIDE (052)
Research suggests children have seven distinct intelligences (linguistic, logical-mathematical, spatial, musical, bodily kinesthetic, interpersonal, and intrapersonal). The article presents ideas to help elementary teachers develop intelligences in their students. It describes the project approach to providing multiple opportunities for using student strengths in a typical unit on Columbus' voyage. (SM)
Descriptors: Academic Achievement; *Academic Aptitude; Curriculum Development; Elementary Education; Holistic Approach; *Individual Differences; *Intellectual Development; Intelligence; *Student Characteristics; Student Motivation; Teacher Role; Teaching Methods; Theory Practice Relationship

EJ447668 PS519595
Using the Project Approacl with Toddlers.
LeeKeenan, Debbie; Edwards, Carolyn P.
Young Children, v47 n4 p31-35 May 1992
ISSN: 0044-0728
Available From: UMI
Document Type: JOURNAL ARTICLE (080); PROJECT DESCRIPTION (141)
Discusses the design and development of an in-depth study project curriculum for toddlers. Offers examples of the use of the spiraling curriculum in toddlers' and two year olds' classes. Provides guidelines for conducting in-depth study projects with toddlers. (BB)
Descriptors: Childhood Interests; *Curriculum Design; Curriculum Development; *Day Care Centers; Parent Participation; Preschool Education; Program Descriptions; Spiral Curriculum; *Student Projects; *Thematic Approach; *Toddlers
Identifiers: Process Product Relationship

EJ410747 PS517437
A Bag of Hair: American 1st-Graders Experience Japan.
Glover, Mary Kenner
Childhood Education, v66 n3 p155-59 Spr 1990
Available From: UMI
Document Type: JOURNAL ARTICLE (080); PROJECT DESCRIPTION (141)
Presents an account of the project approach used by American first graders to study Japan. (BB)
Descriptors: Cross Cultural Studies; *Cultural Differences; *Elementary School Students; Foreign Countries; *Grade 1; *Integrated Activities; Learning Activities; Primary Education; Program Descriptions; Public Education; Teacher Role; Teaching Methods; *Thematic Approach
Identifiers: Developmentally Appropriate Programs; *Japan; *United States

EJ365881 CS735133

Reading for Information in the Primary School.

Whysall, Roger

Reading, v21 n3 p169-77 Nov 1987

Available From: UMI

Document Type: JOURNAL ARTICLE (080); TEACHING GUIDE (052)

Criticizes the "project" approach to reading instruction, where beginning reading students are supposed to learn the skills it takes to find out information for themselves by reading from sources. Points out that a large number of ill-defined skills which are not taught explicitly are required to sucessfully complete a project. (SKC)

Descriptors: Beginning Reading; *Content Area Reading; *Decoding (Reading); Elementary Education; Foreign Countries; *Reading Difficulties; *Reading Instruction; Reading Materials; Reading Research; *Reading Skills; Reading Strategies; Research Problems; *Teaching Methods

Identifiers: United Kingdom

EJ300174 PS512626

Challenging Language Experiences: The Project Approach vs. "Reeling and Writhing."

Koeller, Shirley

Childhood Education, v60 n5 p331-35 May-Jun 1984

Available From: UMI

Document Type: TEACHING GUIDE (052)

Outlines writing/reading experiences in projects that stretch conceptual understanding and illustrates ways to relate language experiences to children's everyday experiences. (CI)

Descriptors: Classroom Communication; *Comprehension; *Concept Formation; Experiential Learning; *Language Enrichment; Primary Education; Reading Skills; *Student Projects; *Teaching Methods; Writing Skills

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